Education Bulletin – October 2023

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Contents

General Healthcare Education

Man and machine in perfect harmony?

Source: BMC Medical Education
In a nutshell: It's a good job most medical devices are more reliable than office printers; imagine blood jams, doubling the dose by hitting OK twice on the chemo machine, or inadvertently pressing double-sided on an MRI scanner. Things can still go wrong though and in this study Hanna Maruhn, from University Medical Centre Hamburg-Eppendorf in Germany, led a team of researchers investigating the effectiveness of an educational bundle which included video self-training, checklists, and pocket cards. The study found the initiative led to significant improvements in staff performance in both a multiple-choice and practical-skills test. There was a notable increase in self-confidence among the participants, and compliance with mechanical-ventilation treatment goals rose from 87.8% to 94.5%.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04599-1

What makes or breaks team science?

Source: BMC Medical Education
In a nutshell: Sadly most people's knowledge of inventors stops with the steam engine, power loom and spinning jenny leaving the luminaries behind washing machines, dishwashers and toasters languishing in relative obscurity. And while Faraday takes the kudos for discovering electricity most scientific papers have a string of authors as long as the telephone directory. "Team Science," was the subject of this article from a team of researchers led by Arezoo Ghamgosar, from the Iran University of Medical Sciences, in Tehran. The researchers found 35 articles which met their quality criteria. Human barriers to team science included the characteristics of the researchers themselves; teaming skills; and time. Human facilitators included:

- Characteristics of researchers
- Roles
- Goals
- Communication
- Trust
- Conflict
- Disciplinary distances
- Academic rank
- Collaboration experience

Organizational barriers included: institutional policies; team-science integration; and funding. Whereas organizational facilitators were team-science skills training; institutional policies; and evaluation. Technological barriers included complexity of

technique and privacy issues whilst technological facilitators included “virtual readiness,” and data management.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04619-0

Critically reflecting on critical reflection

Source: Sustainability
In a nutshell: As if it wasn’t bad enough seeing one’s ugly mug once, old-style train compartments often had a set-up of mirrors – presumably aimed at those whose morning schedules featured no breakfast and ten minutes lippie application on the 7:27 to Victoria – which produced an endless series of reflections, with one’s visage becoming increasingly diminished as it disappeared, pale and uninteresting, into infinity. A similar process of reflection upon reflection was examined in this study led by Valdonė Indrašienė, from Mykolas Romeris University in Lithuania. They found that “in reflections on … critical-thinking teaching and learning experiences, students emphasize the process of interaction with others and interaction with themselves, focusing not on the external object but rather on the subject – the thinking person – and their relation to their own thinking. In reflection on teaching and learning, students emphasize applying theoretical knowledge in practice, modelled by the teacher.” All well and good but does that give you time to squeeze that zit and stop it bleeding by the time you reach platform 15?

You can read the whole of this article at
https://www.mdpi.com/2071-1050/15/18/13500

Health-literacy education. Over to EU?

Source: BMC Medical Education
In a nutshell: Despite the first half dozen or so pages of any Google search turning up more-or-less reputable medical information (the NHS might not be able to see anybody but it still runs a good web site to tell you the evidence-based treatment they *would* have given you) many people still persist until they find a site claiming that chewing gum, sticking a piece of rhubarb up your rectum, and saying the Lord’s Prayer backwards is an infallible cure for haemorrhoids. Tackling this kind of thing is known as health-literacy training and in this study Roberta Papa, from the Regional Health Agency Marche Region, led a team of researchers investigating the effectiveness of a pilot pan-European health-literacy educational programme. Four pilot tests of the programme took place in Italy, involving 107 students of health-related degrees; three extra pilots were organized in Italy and Germany over the course of the Pandemic. Both the students and their teachers gave positive feedback to the course, said they were relevant to their future professional life, and appreciated the interactive teaching methods used. Tests showed that the course produced a significant improvement in health-literacy awareness. The teachers said that the training material was adequate and flexible, and that it was easy to transfer its lessons into practice.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04608-3

Online learning. You're gonna like it but … well how much exactly and why?

Source: Sustainability
In a nutshell: Humanity tried, God knows it did, with microphones left on mute, people wandering into shot with no clothes on, and ill-advised comments after everyone was supposed to have hung up, but online meetings, and teaching, are here to stay. In this study Yaxi Huang, from Guangdong University of Technology in China, led a team of researchers investigating "user acceptance of online interactive mechanisms for live-streamed teaching in higher-education institutions." i.e. teaching people via Teams. 281 students took part in the study which found that a platform's "interactive functionalities," significantly and positively predicted perceived usability and perceived ease of use. At the same time students' personality traits significantly predicted how motivated they were to interact using the technology and their attitudes towards using it. The students' attitudes towards using the technology "significantly and positively predicted interactive behaviour." "Perceived usability and perceived ease of use mediated the relationship between the platform's interactive functionalities and usage attitudes. Additionally, interaction motivations mediated the relationship between the students' personality traits and interactive behaviour."

You can read the whole of this article at
https://www.mdpi.com/2071-1050/15/18/13529

Getting to grips with the hidden curriculum

Source: BMC Medical Education
In a nutshell: Examining the hidden curriculum is a bit like looking for the Abominable Snowman; it's absurd to expect it to put in an appearance when people are making lots of fuss and palaver trying to unearth it. In this study Amin Hosseini, from Tehran University of Medical Sciences, led a team of researchers reviewing the evidence on attempts to improve the hidden curriculum. They found eight studies which met their quality criteria; seven were in medicine, and one in nursing. The central strategies were:

- Introducing a new curriculum to replace the previous one
- Using team-based clinical clerkship
- Proposing a hidden-curriculum improvement model
- Implementing a "case-based faculty-development workshop"
- Implementing longitudinal and comprehensive educational courses
- Incorporating an educational activity into a small-group programme

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04652-z

Lecturers online. Idle, idols, does it matter at all?

Source: Computers & Education
In a nutshell: Stuck in the middle between old-school broadcast television and new-fangled streaming we watch most of our television via our Humax recorder which allows us to skip past adverts and the first five minutes of programmes, and our son to constantly rewind and re-watch the best bits from *Hey Duggie*, *Scooby Do* and *Saturday Mash-Up*. In much the same way students can now watch recordings of the lectures they could (should?) have seen live, at their first transmission, so to speak. In this study Kasia Banas, from Edinburgh University, led a team of researchers investigating students' attitudes to recorded lectures. The researchers studied 212 psychology students and found that going to lectures live, using recordings as a supplement to lectures, and using recordings as a substitute for lectures were all viewed favourably and seen as acceptable. "The more positive the students' own attitude and the perceived peer norm towards engaging with lectures in a particular way (attending live, using recordings as a supplement, or using recordings as a substitute), the more likely students were to engage with lectures in that way."

You can read the abstract of this article at
https://doi.org/10.1016/j.compedu.2023.104933

Engagement – the Moby Dick of online learning

Source: Computers & Education
In a nutshell: Engagement – in either education or work – is a bit like the blue whale. Most people are convinced of its value, but few have seen it in the wild. Latest to play Captain Ahab in search of this psychological Moby Dick were a team of researchers led by Mohammed Saqr, from the University of Eastern Finland. They studied engagement in online learning in a sample of 238 college students. They found that "cognitively-engaging," instructions helped cognitively-engaged students stay engaged but had a negative effect on disengaged students, whereas lectures – a resource that required less mental energy – helped improve disengaged students.

You can read the abstract of this article at
https://doi.org/10.1016/j.compedu.2023.104934

Gamification and evaluation

Source: Sustainability
In a nutshell: Sadly gamification hasn't reached the world of politics yet, otherwise it would be tempting to organize a snakes-and-ladders competition among the 92 hereditary peers in the House of Lords with the winner getting the chance to stage a military coup; it could hardly be worse than the present arrangements, after all. Gamification has reached most other spheres of human activity though and in this study Carlos J. Hellin, from the University of Alcala in Spain, led a team of researchers investigating the effectiveness of a gamification system that combined

automated assessment features with gamification concepts. 215 students took part in the study which found that the new approach had a beneficial effect on "students' willingness to participate in class, study, increase their self-confidence, engage in healthy competition with peers, and learn from their mistakes."

You can read the whole of this article at
https://www.mdpi.com/2071-1050/15/19/14119

Have you got your virtual Pritt Stick Jeremy?

Source: Computers & Education
In a nutshell: It's tempting to wonder how different things might have been had pencils, paper, and books been invented after the computer. "Look! No batteries! A completely renewable supply! No need for servers, electricity, or African children up to their neck in mud digging out cobalt. What's not to like!" We are where we are though and in this study a team of researchers, led by Gustav Bøg Petersen, from the University of Copenhagen, investigated the effectiveness of adding a virtual craft project to an immersive VR session on cell structure. 164 high-school students took part in the study in which – while immersed in virtual reality – they were asked to construct the structure of a cell, working either on their own, or in groups. The researchers found that "adding collaborative generative activities to a VR lesson was more effective at improving learning than adding individual generative activities."

You can read the abstract of this article at
https://doi.org/10.1016/j.compedu.2023.104931

Does class make a difference in virtual reality?

Source: British Journal of Educational Technology
In a nutshell: In Eton Rifles Paul Weller mused on the likely outcome of class conflict with boys from the eponymous school. "All that rugby puts hairs on your chest … We came out of it naturally the worst/Beaten and bloody I was sick down my shirt," he concluded somewhat pessimistically, at least from his point of view; although anecdotal evidence suggests that anyone sporting Christ's Hospital Uniform might be in need of assistance from the Son of Man *and* secondary medical care should they venture out too long onto the streets of Camberwell. But does class make a difference when it comes to augmented-reality games? That was something a team of researchers, led by Michaela Artzmann, from Utrecht University, attempted to find out in this study. 276 children took part and the study found that socio-economic status had no direct, or indirect, effect on performance. However, those students who, whatever their background, felt less self-efficacy in playing the game were more likely to drop out of it.

You can read the abstract of this article at
https://doi.org/10.1111/bjet.13395

Could a receiver mindset be the key to patient safety?

Source: Journal of Health Organization and Management

In a nutshell: When health scandals crop up much attention is given – quite rightly – to the welfare (or lack thereof) of the whistle-blowers. But what about the people hearing the whistle? This was the subject of this article by a team of researchers, led by Melanie Barlow, from Australian Catholic University in Brisbane. They concluded that "speaking up is an intergroup interaction where social identities, context and speaker stance intersect, directly influencing both perceptions of and responses to the message." They found that "when spoken up *to*, health professionals poorly manage their emotions and ineffectively clarify the speaker's concerns." They also found that "targeted training for receivers is overwhelmingly absent from speaking-up programmes." In response to this they developed a "receiver-mindset framework which provides an evidence-based, healthcare specific, receiver-focused framework to inform [training] programmes."

You can read the abstract of this article at
https://doi.org/10.1108/JHOM-06-2023-0171

Interprofessional Education

Autism and interprofessionalism

Source: School Psychology

In a nutshell: I often find myself expressing surprise at the amount of time teachers devote to autism during their training, that surprise being of the tarantula in the sock drawer rather than unexpected £20 note in the wallet variety. In this study Johanna R. Price, from Western Carolina University, led a team of researchers describing and assessing a programme called INTERACT in which 24 psychology, special-education, and SALT graduates took part in coursework and team-based clinical experiences about working with autistic children. The INTERACT programme led to positive attitudes towards interprofessional practice, and the participants demonstrated high levels of knowledge about autism. The researchers concluded that "project INTERACT scholars developed knowledge and skills related to understanding, assessing, and treating autistic children with intellectual disabilities, through the lens of team-based interprofessional collaboration."

You can read the abstract of this article at
https://doi.org/10.1037/spq0000570

When the stars align who ends up doing the dishes?

Source: BMC Medical Education

In a nutshell: My wife and I allocate tasks according to our respective competence and abilities. So while she coordinates building work and manages the family finances, I muck out the guinea-pig hutch and clean the downstairs toilet. In this study Tove Törnqvist, from Linköping University in Sweden, led a team of researchers investigating the psychology behind how students allocated tasks during an interprofessional training exercise. They found that "Students relate to

intersecting communities of practice when they negotiate what they should do to help a patient and who should do it. When the different communities of practice align, they support students in coming to an agreement. However, these communities of practice sometimes pulled the students in different directions, and negotiations were sometimes interrupted or stranded. On those occasions, observations show how the interprofessional learning practice conflicted with either clinical practice or one of the student's profession-specific practices. Conditions that had an impact on whether or not communities of practice aligned when students negotiated these situations proved to be 'having time to negotiate or not', as well as 'feeling safe or not'.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04636-z

Medical Education

Help there's an eye worm in my VR headset!

Source: BMC Medical Education
In a nutshell: Not every employee is as assiduous with the wet wipes as they should be. Food for thought next time you're in a commercial arena that hires out virtual-reality headsets. And whereas most people's choice of virtual-reality scenario might feature scoring the winning goal in the World Cup Final, singing with your favourite band or being a fly on the wall of a gym changing room it was eyelash mites and other human parasites that 113 Chinese medical students grappled with in this study, led by Fei Gao, from Bowling Green State University in Ohio. The students were divided into two groups with one learning about parasites via a virtual-reality simulation and the other attending an online lecture. The students in the simulation group exhibited a significantly higher knowledge gain than the lecture group, and retained knowledge significantly better. They also experienced a "significant increase in subjective task values."

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04589-3

Can student-centred learning get medical students to clean up their act?

Source: BMC Medical Education
In a nutshell: Explorer and TV presenter Bruce Parry deliberately eats food off the floor to bolster his immune system before he heads off into far-flung corners to subsist on a diet of yak, lizard, or roasted monkey. Medical institutions tend to take a dim view of this kind of thing and are quite keen on handwashing and "biomedical waste management," i.e. putting tissues into the bin rather than letting them mature under the bed for six months like the bacteriological version of a Dom Perignon champagne cellar. In this study Imen Mlouki, from the University of Monastir in

Tunisia, led a team of researchers comparing the effectiveness of traditional teaching and student-centred learning at teaching 203 medical students about these topics. 105 had conventional training based on presentations and simulations, guided by the teacher, whilst the rest used a student-centred training method based on courses and simulated exercises prepared by the students themselves. Both methods led to a statistically-significant increase in test scores, although there was a greater improvement for those who had student-centred learning and they improve more when it came to hand hygiene. "Concerning infectious waste, mean scores were higher after student-centred learning in all hazardous waste-management steps."

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04617-2

Can doctors deal with the vaccine shy?

Source: BMC Medical Education
In a nutshell: Not all parents are willing to have their children vaccinated. Different sides of the debate would argue that this is either a legitimate refusal to subject children to medical interference, or a reckless and selfish unwillingness to protect the population at large and achieve herd immunity. It's not for this bulletin to take sides but in this study Asma R. Albaker, from King Saud University, led a team of researchers investigating 90 doctors' attitudes to, and confidence in, tackling the vaccine-hesitant. The most-discussed topics were vaccine necessity, reasons for vaccine refusal, and vaccine safety. 18.8% said they were extremely confident in tackling this subject and 42.2% said they were confident in their vaccine-specific knowledge. 22.2% were extremely confident about their communication skills and 45.6% were confident. Determinants of higher confidence were: being older, years of practice, and the number of patients seen during the course of a day. 51% said they sometimes found it challenging to conduct an appropriate vaccine-related discussion because of having too many other issues to discuss during the consultation. 59% agreed, or strongly agreed, that "parental refusal to vaccinate would raise suspicions of negligence," and 65% disagreed/strongly disagreed that "parental refusal of vaccines is a parental right." "Participants expressed the need to refer VHPs to a specialised advisory clinic with excellent experience and negotiation skills to overcome the challenges."

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04590-w

Research and practice. DMZ or trip down the corridor?

Source: BMC Medical Education
In a nutshell: Getting practitioners to research, and research into practice, should be a fairly straightforward affair, consisting of at best a stroll down a corridor, or at most a phone call and a short train journey to one's local university. In practice, if the gloomier articles in the literature are to be believed, it's more akin to attempting to cross the demilitarized zone (DMZ) between North and South Korea. In this study

Barbara Hendriks and Martin Reinhart, from the Humboldt Universität in Berlin, interviewed people taking part in Germany's nationwide clinician scientist programmes. They found three types of challenges for establishing and ensuring long-term career paths for clinician scientists. "First, local working conditions need to allow for clinician scientists to create and perform tasks that combine research, teaching, patient care and translation synergistically. Protection from the urgency of patient care and from metrics-based performance measures both in the clinic and in research seem key here. Second, a stable career path requires new target positions besides clinic management and senior residency. Third, there is a need for cultural change within university medicine that recognizes and rewards new translation-focused practices."
You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04584-8

Can peer role-playing help with paediatrics?

Source: BMC Medical Education
In a nutshell: Seeing the phrase Mini-CEX in an article on paediatric medicine brought me up with a start, and not-so-fond thoughts of Jimmy Savile, until the authors established it stood for mini-Clinical Evaluation Exercise. This was one of the assessment tools used by a team of researchers – led by Lingling Xu, from The First Affiliated Hospital of Sun Yat-sen in China – in this study which aimed to find out whether peer role-playing could improve the clinical skills of paediatric trainees. The researchers found that the group which took part in the role plays had superior clinical skills – including communication, history taking, professionalism, organization, clinical skills, and physical examination – compared to a group taught using more traditional methods. The role-playing method had a satisfaction rate of 75%.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04554-0

Can real-time feedback help teachers?

Source: BMC Medical Education
In a nutshell: Footballers are one of the few professions who get real-time feedback on their efforts – just ask any hapless full-back in the lower reaches of League Two as he slices a clearance into Row Z. Lecturers are not always used to this, although much can be inferred from the snores emanating from one end of the classroom and the game of poker taking part in the opposite corner. In this study Zhi-Ping Liu, from The First Affiliated Hospital of Harbin Medical University in China, led a team of researchers investigating the effect of real-time feedback on lecturers teaching two classes of 115 fourth-year medical students each. One class was taught conventionally but the other class was taught in a series of blocks with a test after each block. If fewer than 90% of the students got a test right at the end of each block the teacher got feedback from the students and the teacher then had to adjust their teaching in the light of this.* The teacher in the feedback group adjusted their teaching three

times in response to the feedback from the students. The group who gave feedback got higher scores on a test and had better attendance and participation. A further questionnaire showed that this method was "approved by students."

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04643-0

*Sadly the lecturers weren't allowed to give feedback to the students along the lines of "pull your fingers out, you thick dipsticks." We live in a very consumerist age when it comes to education.

Videos and vertical mattresses

Source: BMC Medical Education
In a nutshell: Also looking into feedback (see above) were a team of researchers, led by Kasaya Tantiplachiva, from Chulalongkorn University in Bangkok. They compared feedback given face-to-face and feedback given after watching a video of the students' performance in a sample of 58 third- and fourth-year medical students learning how to perform vertical mattress suture. They found that both face-to-face feedback and feedback based on a video of the students led to a significant improvement of skills, and that both groups of students retained their skills four week later, without doing any more practice. Self-efficacy, test anxiety, and cognitive strategy scores were significantly increased in both groups and there was no difference in satisfaction between them.

Should medical students be taught about sexual harassment?

Source: The Guardian
In a nutshell: Just as some people are reluctant to believe that drying yourself with sandpaper can damage your skin without first conducting a randomized-controlled trial, so others think that nothing – getting dressed, the wrongness of torturing puppies, or the inadvisability of dining on razor blades - can be learned without being explicitly taught in school. After recent reports of NSIT (not safe in theatre) surgeons there have been calls for students to be taught about sexual harassment at medical school. However, recent research, reported here by *The Guardian* has found that more than a third of UK medical students do not receive sexual misconduct training. "Almost half of medical schools offered no training or only generalized harassment training that was not specific to sexual misconduct or that was wholly outside the context of being a doctor." The Working Party on Sexual Misconduct in Surgery found that 29% of women had experienced unwanted physical advances at work, more than 40% had received uninvited comments about their body; and 38% said they had received sexual banter at work.

You can read the whole of this article at

https://www.theguardian.com/education/2023/sep/12/third-of-uk-medical-students-get-no-sexual-misconduct-training-study-finds

A headset, a 3D printer, and a medical student walk into an operating theatre and …

Source: BMC Medical Education

In a nutshell: "All the world's a stage," declared Shakespeare "and all the men and women merely players," neglecting to mention that in situations not explicitly deemed tragic farce is only ever a heartbeat away. Attempting to combine virtual-reality headsets, 3D printers and brain surgery might be thought to be tempting providence in at least one of these directions – "Aargh I've got brain cells splattered all over my goggles," "Never mind about that I've got some spinal cord tangled up in this printer jam!" etc – but that was the subject of this study by a team of researchers, led by Yilong Peng, from The Second Affiliated Hospital of Fujian Medical University in China. "Digital Imaging and Communications in Medicine (DICOM) format image data of two patients with common neurosurgical diseases (hydrocephalus and basal ganglia haemorrhage) were imported into 3D Slicer software for 3D reconstruction, saved, and printed using 3D printing to produce a 1:1-sized head model with real person characteristics. The required model (brain ventricle, haematoma, puncture path, etc.) was constructed and imported into the head-mounted MR device, HoloLens, and a risk-free, visual, and repeatable system was designed for the training of junior physicians." 16 junior doctors took part in the study and the researchers found that they were "more familiar with the localization of the lateral anterior ventricle horn puncture and the common endoscopic surgery for basal ganglia haemorrhage, as well as more confident in the mastery of these two operations," than those trained using more familiar methods.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04659-6

Can doctors read an ECG in an emergency?

Source: BMC Medical Education

In a nutshell: ECG monitors can be hard to read although it's safe to say that if they sound either like the wilder shores of drum'n'bass or John Cage's Four Minutes Thirty-Three Seconds you're in trouble. In this study Alice Perrichot, from Beaujon Hospital in France, led a team of researchers "assessing the quality of real-time ECG interpretation by senior emergency physicians compared to cardiologists and an ECG expert." 905 ECGs were analysed of which 78% resulted in a similar interpretation between emergency physicians and cardiologists. However, there was only a 66% match between emergency doctors' identification of major abnormalities and those of cardiologists. ECGs were correctly classified by emergency physicians according to their emergency level in 82% of cases and emergency physicians correctly recognized normal ECGs.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04670-x

How many ingredients do you need to teach biochemistry?

Source: BMC Medical Education
In a nutshell: In *Ready Steady Cook* two chefs were challenged to produce a meal from random ingredients – a Cadbury's Crème Egg, a stick of celery, a quail's egg, some raspberry jam, and a pickled onion – against the clock, an approach refined a little by Jamie Oliver in his new series *Five Ingredients*. Throwing the kitchen sink at teaching biochemistry were a team of researchers led by Haiyan Ji, from Nantong University in China who used the flipped classroom, team-based learning and WeChat in a study of 68 medical students. The students were divided into two groups one group using the new techniques and the other being taught more traditionally. The researchers found that, compared to the traditional teaching model, the new approach significantly improved students' final exam scores and they were also more satisfied with their teaching. Eight students were later interviewed about the new methods and three themes emerged from the interview with them:

- Stimulating interest in learning
- Improving the ability of autonomous learning
- Recommendations for improvement

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04623-4

Problem-based learning? No problem!

Source: BMC Medical Education
In a nutshell: Also adding something new into the educational mix were Pingping Song and Xiangchun Shen from Guizhou University in China who studied the use of problem-based learning in teaching students about immunochemistry. 155 students took part in the study which found that problem-based learning led to better marks, enhanced interest in learning, better independent problem-solving ability, more scientific thought and greater "teamwork awareness."

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04678-3

When do medical students reach the age of clinical reason(ing)?

Source: BMC Medical Education
In a nutshell: When we bought our first car on our own account after only just having passed our driving tests my wife and I had to split up into two separate parties, one driving through Warrington in our old, borrowed car, without the benefit

of a satnav, and the other piloting the new car home. OK, so it wasn't Kate Adie reporting from downtown Aleppo but it's safe to say we both acquired a few more grey hairs that day. Making decisions without possessing the full range of knowledge and expertise was also the lot of the 121 first- and second-year medical students taking part in this study, led by Justine Staal, from the Institute of Medical Education Research in Rotterdam. The researchers tested various aspects of the students' clinical reasoning and found they scored much lower for diagnostic justification than for differential diagnosis, ordering tests, and identifying the correct diagnosis. They under-used information from physical examination and underused information that could have reduced the probability of an incorrect diagnosis. However, after 10-11 practice cases the students diagnostic justification scores improved by 40%.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04541-5

Picture this

Source: BMC Medical Education
In a nutshell: My son went through a phase of watching videos of people sliding down water slides at amusement parks, all filmed using a GoPro camera. Also sending GoPro through tubes, albeit rather narrower ones at – one hopes – a slightly lower velocity. were a team of researchers, led by Akira Uchiyama, from Juntendo University School of Medicine in Japan. They studied the use of GoPro cameras by endoscopists who wore the cameras on their heads to display a doctor's eye view of proceedings to medical students outside the room. 78.6% of the students watching the films evaluated the GoPro as good and 57.2% said that it had increased their understanding. 71.4% said that it had increased their understanding of procedures. 85.7% said that it had increased their interest in endoscopy. The researchers concluded that "education using GoPro videos enabled students to feel as if they were conducting the endoscopy themselves and enabled them to concentrate on learning." Whether they preferred it to *Barbie* or *Oppenheimer* is anyone's guess as sadly this question wasn't covered by the researchers.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04702-6

What do students get out of doing good?

Source: BMC Medical Education
In a nutshell: Rather like Boy Scouts medical students sometimes get sent out to do good deeds as part of their equivalent of getting a golden arrow – i.e. becoming a consultant. This is known as "service learning," and in this study Shih-Chieh Liao, from China Medical University in Taiwan, led a group of researchers investigating what students made of it. 135 first-year medical students took part in the study, which found that service learning significantly improved students' interpersonal skills; their ability to learn and grow from work; and their sense of professionalism. Students' favourite parts of their service learning were:

- Executing the project
- Group discussions and project formulation
- Overall course review
- Review of project outcomes
- Outcome presentations
- Teaching proposal writing and project brainstorming
- Sharing of service-learning experiences by teachers
- Sharing of service-learning experiences by teaching assistants

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04671-w

From Playboy to plastic surgery

Source: BMC Medical Education
In a nutshell: Within the lifetime of many of us things young people get up to in their bedroom have shifted from activities traditionally thought to induce blindness – reading under the covers perhaps – to anything from starting up a terrorist cell in Kettering, or acquiring a degree in civil engineering. It was the latter end of this spectrum that a team of researchers, led by Siyou Song from the University of California, examined in this study. They examined the effect of a Virtual Education Platform and Virtual Visiting Professorship which was added to their programme for junior doctors working in plastic surgery in March 2020. All of the junior doctors who took part in the study agreed that virtual conferences should remain a core component in junior doctors' training, even after the end of social distancing. 74% said they learned a lot, or a great deal, from the virtual visiting professorship. Easy accessibility without travel time was the most-mentioned advantage of the virtual approach with the most-commonly reported disadvantage being a lack of social interaction and community.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04645-y

Is interacting interesting?

Source: BMC Medical Education
In a nutshell: Driven to distraction in freshers' week by one-too-many stories about people single-handedly building orphanages in Colombia, while learning the tango, and bringing out a new translation of Gabriel García Márquez I rather churlishly opined that doing things was over-rated. It's a philosophical tenet I've grown increasingly attached to over the years, especially after finding a religion that counsels that very approach. Education, however, appears to be moving in a very different direction with everybody encouraged to vote in polls, press buttons, and stick their hands up at every possible moment like a hopelessly-addicted lab rat looking for their next crack-impregnated food pellet. In this study Kung-Chen Ho,

from National Yang-Ming Chiao-Tung University in Taiwan, led a team of researchers studying the effectiveness of online interactive visual learning for 64 postgraduate doctors between September 2021 and April 2022. They found that the online learning tools facilitated the doctors' active learning processes by reducing their learning burden and increasing their learning interest. The doctors' test scores improved significantly and their "imaging recognition," also improved markedly.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04639-w

Nurse Education

Does micro mean mastery?

Source: BMC Medical Education
In a nutshell: As human concentration spans shrink remorselessly – "Ashes to ashes, dust to dust – look, there's a butterfly!" – it will come as no surprise when Classics at Oxford eventually gets taught via the medium of Christmas-cracker jokes.* In this study a team of researchers, led by Hossein Haghighat from Alborz University of Medical Sciences in Iran, studied the effect of a micro-learning course which used whiteboard animations, video casts, and live videos and was repeated four times over the course of 36 days. 30 final-year nursing students took the course, which was on trauma care. The researchers found that "the use of micro-learning has a positive effect on the promotion and retention of knowledge of trauma care, as well as increasing nursing students' satisfaction."

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04609-2

*e.g. "Why can't Medusa hold down a relationship? Because all of her boyfriends get stoned.

Mastering medication for minors

Source: Nurse Education in Practice
In a nutshell: Although I congratulate myself when I put the bins out on the right day, and turn up for work in matching socks and a pair of trousers; and although I gleefully glug back Night Nurse with gay abandon, I *am* very meticulous in keeping a record of, and communicating to my wife, dosing up of our children with Calpol. Medicating minors is no laughing matter with the consequences of an unticked box, or misplaced decimal point being potentially catastrophic. In this study Kamile Akça and Soner Berşe, from Gaziantep University in Turkey, studied 368 nursing students' abilities in this area. They found that the clinical decision-making levels of the male students, the fourth-year nursing students, and those who did not experience anxiety during medication administration were significantly higher. "The self-efficacy of the

students who did not experience anxiety during medication administration to children was found to be significantly higher than the others."

You can read the abstract of this article at
https://doi.org/10.1016/j.nepr.2023.103775

Administration and anxiety

Source: Nurse Education Today
In a nutshell: Also investigating the thorny issue of doling out drugs were Kathleen M. Huun, and James E. Slaven from Indiana State University and Indiana University respectively. They compared an "e-simulated high-stakes medication administration test," with a "standard high-stakes medication math [sic] assessment," in a study of 681 students. 435 of the students were taking a traditional nursing course and the rest were taking an online course. The researchers found that "for both tracks, testing anxiety remained a factor with no significant difference in the anxiety level between assessment modalities [methods]." Anxiety scores decreased over time and the students on the traditional course had slightly-lower anxiety scores than the students doing the online course.
You can read the abstract of this article at
https://doi.org/10.1016/j.nedt.2023.105960

What makes a good mental-health nurse?

Source: Nurse Education in Practice
In a nutshell: The qualities which make a good mental-health nurse are a moot point although one suspects tea-making, the ability to procure duty-free cigarettes, and a copious supply of biscuits might be high up many of their clients' wish-lists. In this study Joanna M. Painter, from Hallam University in Sheffield, led a team of researchers who interviewed 26 practice assessors of student mental-health nurses on placement. The researchers found that practice assessors were prioritising two core areas or broad-based skills categories: "transactional," and "transformational," competencies. Transactional competencies related to the practical application of specific tasks, whereas transformational competencies – which were commented on more frequently – emphasized students' personal attributes and characteristics, and how these contributed to "good," mental-health nursing practice.

You can read the abstract of this article at
https://doi.org/10.1016/j.nepr.2023.103776

What makes it harder to tackle substance users?

Source: Nurse Education Today
In a nutshell: In this study Tajmohammad Arazi, from Neyshabur University of Medical Sciences in Iran, led a team of researchers investigating the barriers nursing students perceived when it came to looking after people with substance-use

problems. The researchers interviewed 34 students. Barriers were described through the major theme *lack of communication skills and difficulty finding language for … therapeutic communication with people with substance use disorders*. Three barriers to communication were described as: *possessing of witnessing prejudiced attitudes and stereotypes*, *negative role models*, and *knowledge deficit in self or others*.

You can read the abstract of this article at
https://doi.org/10.1016/j.nedt.2023.105961

Can apps take us back to the suture?

Source: Nurse Education Today
In a nutshell: Sewing human flesh is an activity that tends only to be indulged in by the medical profession, and the more arts-and-crafts type of serial killer. In this study Jun-Ming Su, from the National University of Tainan, in Taiwan, led a team of researchers investigating the effectiveness of a mobile-based web app developed to teach nurse practitioners simple suturing skills. The system used mobile devices to simulate hands-on suturing and provided learning guidance and feedback to support self-learning with a physical suturing kit. Compared to a control group the group who used the app exhibited significant improvements in learning outcomes, self-confidence, self-efficacy, and learning anxiety and were satisfied with the app. The app was found to enhance learning outcomes and self-efficacy and reduce learning anxiety compared to a control group although it made no significant difference to self-confidence.

You can read the abstract of this article at
https://doi.org/10.1016/j.nedt.2023.105959

Supervising international nurses

Source: Nurse Education Today
In a nutshell: At a recent day for international nurses in our Trust I gaily launched myself into one of the savoury snacks on offer at the Nepalese stand, only to be met by a gustatory experience best characterized as “cardboard and hay three ways.” It was only a few minutes later that I was informed that said article required 20 minutes boiling in warm water before being fit for human consumption. What the Nepalese made of the scones is anyone’s guess. In this study E. Eriksson, from the University of Gävle in Sweden, led a team of researchers interviewing 15 preceptors who supervised internationally-educated nurses. They found that “supervising internationally educated nurses was not the same as supervising nursing students and raised feelings of both joy and frustration. Preceptors had to adapt supervision to the student's nursing knowledge and skills. They had to help students communicate in Swedish and form good relationships with other students, patients, and other professionals. Most preceptors requested more information about the student's nurse education, country of education/cultural background, and previous work

experiences. Mixed experiences of support from the university, first-line managers, and colleagues were reported."

You can read the abstract of this article at
https://doi.org/10.1016/j.nedt.2023.105975

Dressing wounds – how much practice makes perfect?

Source: BMC Medical Education
In a nutshell: "How many roads must a man walk down/Before you call him a man?/How many seas must a white dove sail/Before she sleeps in the sand?" asked Bob Dylan before proffering the disappointingly non-specific response that the answer was to be found blowing in the wind. Sadly researchers of any stripe are not given much to poetry (or scansion) and the question posed in this study, by a team of researchers led by Batoul Alizadeh-Taghiabad, from Neyshabur University of Medical Sciences in Iran, was "how many times should a nursing student perform burn wound dressing to attain clinical competency?"* 41 nursing students took part in the study which concluded that they reached a good level of competence, but did not get any better, after their fifth attempt.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04673-8

*Come on Bob you know you can squeeze this into the third verse

Exhausted in Istanbul, burnt out in Bursa

Source: Nurse Education Today
In a nutshell: I often fantasize about being reincarnated as a guinea pig. Certainly if all the articles written about burnout in healthcare professionals were printed out and shredded they would have a nice pile to burrow into, hide from the patients, and snuggle down in for forty winks. Latest to add to the pile were a team of researchers, led by Nursan Çinar, from Sakarya University in Turkey. Out of a sample of 148 nursing students they found that one in five were in danger of burnout and that the prevalence of burnout in nursing senior students was 73.7%. Factors contributing to burnout were: nurse education and professional practices; the Pandemic; financial concerns; family-related situations; not finding time for social activities; and anxiety about the future.

You can read the abstract of this article at
https://doi.org/10.1016/j.nedt.2023.105979

Is blended best?

Source: Nurse Education in Practice

In a nutshell: It might well say something about me that – despite writing this bulletin for several years now – my first reaction on seeing the word blended inevitably turns to either whisky, tea, or coffee. Blended learning consists of a mixture of online and in-person teaching (whisky and caffeine optional) and in this study Yirou Niu, from Jilin University in China, led a team of researchers reviewing the evidence on its effectiveness. The researchers found 26 studies which met their quality criteria which included a total of 2,823 nursing students. They found that blended learning was more effective in teaching knowledge and skills compared to non-blended learning. Blended learning led to a significant improvement in the students' critical-thinking ability and was found to have a positive impact on students' mental health.

You can read the abstract of this article at
https://doi.org/10.1016/j.nepr.2023.103786

Can time management make you a better nurse?

Source: Nurse Education in Practice
In a nutshell: If all the time spent by people complaining how much work they had on their plate was put towards clearing said item of crockery we could all be heading home to our families by half-past three every afternoon; although perhaps that is the whole point of certain people's procrastination via persiflage – better to spend half an hour chinwagging with Mabel about your email backlog than go home to a blocked toilet and Stephanie's algebra homework. In this study Maryam Behdarvand, from Ahvaz Jundishapur University of Medical Sciences in Iran, led a team of researchers investigating the links between perceived clinical competence and time management in a sample of 221 undergraduate nursing students. The researchers found that "overall time management and interest in the field of nursing were predictors for overall clinical competence in nursing students.

You can read the abstract of this article at
https://doi.org/10.1016/j.nepr.2023.103789

What do students think caring is?

Source: Nurse Education in Practice
In a nutshell: Anyone can write poetry, in the same way that anyone can cook. It might be enjoyable rustling up some beans and toast followed by butterscotch Angel Delight, but you shouldn't necessarily expect anyone to be impressed by, let alone pay for, it. In this study a team of researchers, led by Elena Andina-Díaz from the University of León in Spain, explored "the potential of photovoice, storytelling and poetry as instruments capable of encouraging reflection." The researchers wanted to "identify through images … and poetic narratives … the perception that students of the nursing degree express about nursing care." Five topics emerged from the students' creative endeavours which were:

- Care
- Accompaniment through the life cycle
- Working on the basis of values
- Caring for small details

You can read the abstract of this article at
https://doi.org/10.1016/j.nepr.2023.103791

Demented and doing porridge – are the nurses ready for it?

Source: Nurse Education in Practice
In a nutshell: Some of the country's most egregious wrongdoers are destined to spend the rest of their life behind bars and some of them may well develop dementia while they're in there. But how well equipped are nurses to cope. That was the question a team of researchers, led by Sherryl Gaston, from the University of Adelaide, attempted to answer in this study. They interviewed a number of prison nurses and found that while they showed a general understanding of dementia and its environmental impact they "lacked knowledge of late-stage changes."

You can read the abstract of this article at
https://doi.org/10.1016/j.nepr.2023.103787

Can learning problem-solving make you more resilient?

Source: Nurse Education in Practice
In a nutshell: Anyone who is married, or has a line manager, will find an added layer of complexity to problem solving; not only do you have to find a way to deal with the problem in front of you, you also have to work out how your wife or supervisor would have *wanted* you to solve it – which can be a very different kettle of fish indeed. In this study Süleyman Ümit Şenocak and Fatma Demirkíran, from the University of Aydín Adnan Menderes in Turkey, investigated whether problem-solving skills development training could increase resilience, perceived stress, and self-efficacy in nursing students. The students in the study were divided into two groups, with one group receiving problem-solving skills development training based on the Social Problem-Solving Model once a week for a total of seven weeks; each session lasting between 55 and 150 minutes. The researchers found that skills for problem-solving, resilience, and self-efficacy in the group who had taken part in the training were significantly higher than the other nurses, and their stress was significantly lower.

You can read the abstract of this article at
https://doi.org/10.1016/j.nepr.2023.103795

Covid- raking over the ashes, again

Source: Nurse Education in Practice

In a nutshell: There weren't as many universities or researchers around in 1945 as there are now, which is perhaps a good job as if there had been we might still be sitting around in the rubble asking each other how frightening we found the Blitz on a scale of one to five, instead of building houses and reconstructing the welfare state. Things have been different after the Pandemic though, and in this study Graeme D. Smith, from the Caritas Institute of Higher Education, led a team of researchers reviewing the evidence on Covid-19, stress, and resilience among undergraduate nursing students. They found 15 studies which met their quality criteria and concluded that "nursing students from all around the world have experienced high levels of stress during the Covid-19 pandemic. Almost unanimously, resilience was identified as a key protective factor against stress and psychological morbidity. Those nursing students with higher levels of resilience were deemed more likely to stay on track with their studies, despite Covid-related challenges."

You can read the abstract of this article at
https://doi.org/10.1016/j.nepr.2023.103785

Can self-regulated learning make your DREEMs come true?

Source: Nurse Education in Practice
In a nutshell: D Ream, as any self-respecting pub-quizzer knows, were Professor Brian Cox's claim to fame, before he started boggling everyone's mind with BBC science documentaries. For those more interested in medical education than a couple of pints, a pack of salt-and-vinegar crisps, and the chance to win a tenner, however, DREEM stands for the Dundee Ready Educational Environment Measure scale – a measure of the quality of students' learning environments. In this study a team of researchers, led by Yu Liu, from Nanchang University in China, examined the links between the quality of students' learning environment (as measured by DREEM), their ability to engage in self-regulated learning, and their "learning engagement." The researchers found that the students' perceptions of their medical-education environment directly affected how engaged they were in their learning, a relationship that was partially mediated by their ability to engage in self-regulated learning.

You can read the abstract of this article at
https://doi.org/10.1016/j.nepr.2023.103793

Paramedic Education

"You were divine darling. Such a perfect moulage!"

Source: BMC Medical Education
In a nutshell: Moulage might sound like something from the latter stages of *Masterchef,* perhaps featuring a gloopy mixture of chocolate, panna cotta, and gelatine, but is, in fact, the make-up and special effects used in medical simulations to make patients look as though they've stumbled across a chainsaw in an unforgiving mood. It's often used in simulations for people giving pre-hospital care

which were the subject of this study by a team of researchers, led by Maria Ahmad, from Queen Mary University of London. They observed debriefs over two consecutive days and interviewed four facilitators and three students about their experiences of them. Four themes emerged from the interviews which were:

- Approach to facilitation of debriefs
- Effects of debriefing
- Facilitator development
- Obstacles in debriefing

"The unpredictable debriefing environment was seen as both hindering and, paradoxically, benefitting … debriefing. Despite using varied debriefing structures, facilitators emphasised similar key debriefing components including exploring participants' reasoning and sharing experiences to improve learning and prevent future errors. Debriefing was associated with three effects: releasing emotion; learning and improving, particularly compound learning as participants progressed through sequential scenarios; and the application of learning to clinical practice. Facilitator training and feedback were central to facilitator learning and development. Several obstacles to debriefing were identified, including mismatch of participant and facilitator agendas, pressure and time.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04592-8

Physiotherapy Education

Will video kill the lecture-hall star?

Source: BMC Medical Education

In a nutshell: One of my favourite writers is Craig Brown, recent author of best-selling books on The Beatles and Princess Margaret, among others. He writes in his pyjamas on the basis that this prevents him from wandering out of the house and getting distracted. Wider and wider spheres of human activity seem to be able to be undertaken in one's pyjamas these days, entertainment and shopping certainly, and increasingly education. Videos are a great help with the latter and in this study a team of researchers, led by Helena Luginbuehl, from Bern University of Applied Sciences, studied the use of videos over the Pandemic, to teach physiotherapy techniques. 46 students took part in the study. They rated the quality of teaching provided via the videos highly, and two-thirds of them preferred the new approach. They appreciated the fact that the videos were available all the time and enabled self-paced learning. They felt the videos provided an equally good view of the skills being demonstrated and liked the convenience of being able to re-wind and re-view the videos and watch them at different speeds.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04556-y

How playful are physios?

Source: BMC Medical Education
In a nutshell: Play is an intermediate state requiring energy left over between work, domestic chores, and sleep – apart from the occasional game of Scrabble not always achievable by men in their fifties with two small children to look after. In this study Hayriye Kul Karaali and Ozlem Ozcan, from Manisa Celal Bayar University in Turkey, studied physical playfulness and activity in a sample of 268 physiotherapy students. The physios got their highest score for Social Adjustment with the lowest scores being for Desire to Play Game and Taking Pleasure from Playing the Game. Male students scored higher for Risk Taking and Taking Pleasure from Playing the Game. There was a statistically-significant difference between physical-activity habits and Game Compassion, Risk Taking, Social Adjustment and Taking Pleasure from Playing the Game.

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04618-1

Testing gamification in physiotherapy education

Source: BMC Medical Education
In a nutshell: Physiotherapists always seem a cheerful, upbeat bunch, greeting the day with a few stretching exercises, a low-fat breakfast, and an eager expression rather than the customary morose shuffle through to the bathroom indulged in by the rest of us. Just as well perhaps as when they're not being asked about their playfulness (see above) they could be asked to play games during their training at any moment. Gamification in physiotherapy education was the subject of this article by a team of researchers, led by Irene Sandoval-Hernández from the University of Granada in Spain. 33 students took part in the study and they were invited to use different gamification resources such as Kahoot!, Physiotherapy Party*, and Escape Room. The students enjoyed Physiotherapy Party more than the other games but the Escape Room had higher scores for absorption, creative thinking, activation, and dominance. The researchers concluded that "gamification resources promote enjoyment and creativity in the students in the classroom."

You can read the whole of this article at
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04576-8

*No doubt featuring the odd game of Twister