Education Horizon-Scanning Bulletin – October 2019

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General Medical Education

Why it’s plastic fantastic for a growth mindset

Source: Trends in Neuroscience and Education

In a nutshell: A growth mindset is the idea that our deficiencies – not being good at maths, DIY, particle physics etc – aren’t hard-wired but can be overcome with enough practice and hard work. Not surprisingly educators are keen to foster this and it has been shown to improve motivation, academic achievement, and brain activity. In this study Jérémie Blanchette Sarrasin, from the Universite du Quebec a Montreal, led a team of researchers reviewing the evidence on this topic. They found that creating a growth mindset by teaching people about neuroplasticity (the ability of the brain to change as we learn things) had a positive effect on motivation, achievement and brain activity. This was particularly beneficial for at-risk students, especially when it came to maths.

You can read the abstract of this article here.

Memory and curiosity

Source: Experimental Psychology

In a nutshell: Apart from its adverse effect on feline mortality curiosity is generally held to be a good thing. In this study Vered Halamish, from Bar-Ilan University in Israel, led a team of researchers looking into the links between curiosity, memory and learning. People were presented with trivia questions, rated their level of curiosity about each question, and then studied the answers for a subsequent test. In some instances they were offered a reward for doing so, in others they weren’t. Study time was either fixed, or self-paced. Performance on a memory test a week later suggested that curiosity enhanced long-term memory and that rewards did not undermine the benefit of curiosity. When learning was self-paced, study time increased with curiosity but this did not account for the effect of curiosity on memory.

You can read the abstract of this article here.

Teaching dementia in primary care

Source: BMC Medical Education

In a nutshell: Although it’s estimated that a quarter of people in hospital beds have dementia most people suffering from it live out in the community and are supported by primary-care services. It’s important, therefore, that people in primary have the right knowledge, skills and attitudes to meet these care needs. In this study Cara Sass, from Leeds Beckett University, led a team of researchers investigating the
impact of a person-centred dementia educational programme. The researchers found that, at first, people struggled to incorporate the ‘whole-person,’ approach to dementia care but gained knowledge and confidence through self-directed learning. They reacted positively to the training and appreciated opportunities to learn from peers in other services. They identified improvements in communication and prescribing practices. Service users got more timely appointments and there were positive satisfaction ratings from patients and families.

You can read the whole of this article [here](#).

**Medical Education**

**Tackling the shortage of psychiatrists**  
*Source:* British Medical Journal

**In a nutshell:** Despite governments of all shapes and sizes promising to do more to tackle mental health there is currently something of a shortage of psychiatrists. The Royal College of Psychiatrists have been getting a bit worried about this and have now called for the number of medical-school places in England to double from 7,500 to 15,000 by 2029, displaying an overly-optimistic view of reality they might well classify as manic in some of their clients. They hope this will lead to a total of about 4,500 extra consultant psychiatrists in due course. Between 2016 and 2018 1,500 new medical school places were created, including places allocated to five new medical schools in England. The College’s Choose Psychiatry campaign has helped to increase the number of trainees applying to train in psychiatry by 30% since 2017 but psychiatry remains one of the most undersubscribed specialty training programmes, and just 70% of training places were filled in 2017. To help improve medical undergraduates’ experiences of psychiatry the College recommended that medical schools should focus on: excellence in teaching; quality placements; leadership from psychiatrists in undergraduate education; and enrichment activities.

If you have access to the *British Medical Journal* you can read the whole of this article [here](#).

**Virtual bodies, real education**  
*Source:* BMC Medical Education

**In a nutshell:** For many medical students cutting open a corpse is a rite of passage, designed to familiarise them with the human body and overcome any squeamishness they might feel about hacking into it with a scalpel. Like much else in life (although arguably nothing *worth* doing) it’s now possible to do virtually using medical images on touch-screen anatomy visualisation tables. In this study Kathryn E. Darras, from the University of British Columbia, led a team of researchers looking into the effectiveness of virtual dissection. 202 first-year medical students took part in the study and 78.7% of them reported that virtual dissection had enhanced their understanding of cadaveric anatomy and the clinical applications of anatomy. 73.8%
of students also felt that the virtual dissection table was an effective use of laboratory time.

You can read the whole of this article here.

**Wet labs, wise students**

*Source: Clinical Anatomy*

**In a nutshell:** ‘Wet,’ and ‘lab,’ are not words that one expects, or even hopes, to see in the same sentence conjuring up, as they do, images of test tubes full of dangerous chemicals drifting off into the distance and high-voltage equipment spewing out sparks as it becomes the world’s most expensive Catherine wheel. It’s what medical lecturers call labs where students do dissection though and in this study Kellie Shell, from the University of South Carolina, studied the effect of first-year medical students’ dissection of the surface and internal anatomy of the brain, as well as discussions facilitated by the neuroscience faculty and clinicians. They found that the dissection lab led to an increase in the students’ motivation, which was positively correlated with their academic performance.

You can read the whole of this article here.

**Stuffing germs up people’s bottoms. What do medical students think?**

*Source: BMC Medical Education*

**In a nutshell:** French winemakers often talk about *terroir* – the precise combination of soils, climate and landscape conducive to the production of a particular vintage. Scientists now think that the types of bacteria and micro-organisms in and around people’s bodies – particularly the ones in their intestines – can have a similar influence on people’s happiness and wellbeing. When the bugs get out of balance illness follows and one of the ways of dealing with this is faecal microbiota transplantation (FMT); in essence shoving faeces from healthy people up unhealthy people’s bottoms in the hope this will give them more helpful germs and reduce unhealthy ones. In this study Petru C. Madar, from Iuliu Hatieganu University of Medicine and Pharmacy in Romania, led a team of researchers studying what medical students knew about this procedure. 52 students took part in the study which found that a third of them said they had at least a ‘medium,’ level of knowledge about FMT. The top reason for FMT – identified by 76.9% - was *c.difficile* infection; however, 60% believed FMT was a promising therapy for a number of conditions. While almost all the students said they would recommend it 88.4% would explore other options first. Only 39% of participants believed that patients would accept FMT, however, 71% thought that a more socially acceptable name for the procedure and anonymous donors would increase the acceptance rate.

You can read the whole of this article here.
Are doctors biased against the poor?
**Source:** BMC Medical Education

**In a nutshell:** For every poor person having a miserable time there’s a middle-class one feeling guilty about it. Doctors are no exception – to guilt not poverty – and in this study Ibrahim Al Alwan, from the Abdulaziz University for Health Sciences in Saudi Arabia, led a team of researchers trying to test whether doctors treated poorer patients differently from wealthier ones. 45 junior doctors were given 12 written clinical vignettes that were exactly the same except for the description of the patients’ socio-economic status. The researchers found that the accuracy of the doctors’ diagnoses did not differ between the rich and the poor and concluded that “there is no reason to believe that physicians are prejudiced against poor patients and therefore treat them differently from rich patients.”

You can read the whole of this article [here](#).

Murky screens and ejection fractions
**Source:** BMC Medical Education

**In a nutshell:** Any parent who has looked at the ultrasound photograph of their baby and exclaimed “hasn’t he got your smile!” only to be told they’re looking at their offspring’s elbow will sympathise with medical students as they try to get to grips with blurry images of people’s insides as part of their studies. One aspect of this is the interpretation of transthoracic echocardiography – pictures of people’s hearts in action taken from outside the body. In this study Tobias Hüppe, from Saarland University in Germany, led a team of researchers studying the effectiveness of “a structured theoretical and supervised practical course of training in focused echocardiography.” 25 final-year medical students took part in the study which found that the course provided a “clear and measurable learning experience in assessing and measuring left ventricular function.” At least 14 examination blocks were necessary to achieve 90% agreement with tutors on the correct determination of ejection fraction.

When *The Chase* goes to medical school
**Source:** British Journal of Educational Technology

**In a nutshell:** Paul Sinha started life as a doctor before becoming a stand-up comedian, champion quizzer and all-round good egg. But is a journey from quizzing to the medical profession possible? Kate Wilkinson, from Middlesex University, led a team of researchers trying to find out by studying the use of a quiz game before an anatomy assessment for first-year medical students. The game was an optional app which students could play on their mobile phones. Students who used the game showed a significant improvement in their test scores and played the game while commuting on public transport, in their free time at home and at university. They
liked he games because they were interactive, allowed competition, were visually appealing, provided instant feedback and were user friendly.

You can read the abstract of this article [here](#).

**Gene genie changes students to heroes**

**Source:** BMC Medical Education

**In a nutshell:** If they’re not doing so already doctors will soon start paying as much attention to people’s genes as they do to their height, weight, blood pressure and temperature. Genes are rather more complicated though and – for many medical students – a lot less interesting. In this study Kamila Prochazkova, from Charles University in Prague, led a team of researchers developing an online app to teach students about medical genetics. The app simulated the process of molecular genetic diagnosis of a hereditary disorder in a family. 13 tasks guided students through the clinical and laboratory steps needed to reach the final diagnosis. Each task contained links to database and data-processing tools needed to solve the task, and an answer box. If the students got the answer right they could go on to the next task. The researchers found a statistically-significant improvement of knowledge and skills after the practical class, and most comments on the app were positive. You can find the app [here](#).

You can read the whole of this article [here](#).

**Midwifery Education**

**CPD leaves midwives struggling in the sticks**

**Source:** Nurse Education in Practice

**In a nutshell:** Life in the countryside has many compensations, dawn’s early light glistening on dewy fields in May, fat blackberries in the hedgerows and hedgehogs scampering across the lawn. However, getting access to training isn’t one of them and in this study Karen-leigh [sic] Edward, from Swinburne University of Technology in Australia, led a team of researchers investigating how midwives in different locations and settings got on accessing training for their continuing professional development. The researchers found that smaller, more rural facilities lacked dedicated education departments and educators while more specialist centres were more likely to provide breastfeeding continuing professional development. Metropolitan locations also provided more wide-ranging programmes compared to rural and regional ones. Key enablers for CPD were the capacity to share resources, having access to external courses and simulation centres and the provision of relevant and timely CPD programmes.

You can read an abstract of this article [here](#).
Premature babies, simulate treatment

Source: Nurse Education in Practice

In a nutshell: People in hospitals are often called upon to shove things into other people (see above). It’s not necessarily a pleasant experience for anyone involved but it can save people’s lives. One example of this is inserting tubes up premature babies noses in order to get nourishment into their stomachs – nasogastric feeding. In this study Cathy Stoodley, from the University of South Australia, in Adelaide, led a team of researchers investigating the effectiveness of a simulation session designed to teach midwifery students how to insert and manage a neonatal nasogastric tube. The researchers found that “simulation is an effective learning strategy in an undergraduate midwifery program,’ and that ‘students’ knowledge, confidence and skills increased significantly.

You can read the abstract of this article here.

Does a night on call make people less empathetic?

Source: BMC Medical Education

In a nutshell: Working a night shift doesn’t always leave people feeling cheerful but can it reduce your empathy? In this study Michiko Mizobe, from Tokyo Bay Urayasu Ichikawa Medical Centre, led a team of researchers trying to find out. They got 229 junior doctors to fill out questionnaires designed to measure their empathy before and after a night spent on call. The researchers found no significant difference between the doctors’ empathy scores before and after a night shift.

You can read the whole of this article here.

Nurse Education

Cognitive companionship and e-learning

Source: Nurse Education in Practice

In a nutshell: Cognitive companionship might sound like making ‘friends,’ with a 20-stone truck driver in Hartlepool pretending to be a catwalk model but is in fact creating “an optimal social, dialogical and pedagogical interaction between students and educators, where the latter use educational strategies to foster students’ practice of reflection and thus, the acquisition of essential cognitive and metacognitive skills for the development of clinical reasoning.” In other words what normal people are pleased to call thinking for one’s self. In this study Marie-France Deschênes, from the Université de Montreal, in Canada, led a team of researchers reviewing e-learning environments designed to teach nursing students clinical reasoning. The researchers found 18 studies that met their quality criteria and found that the “principles of cognitive companionship in e-learning environments provide key clues from a learning support perspective, such as integrated feedback, interactive group discussion, gaming, and questioning. However, theoretical foundations underlying
educational strategies in e-learning environments are poorly documented and insufficiently associated with cognitive learning models.”

You can read the abstract of this article here.

**Anatomy, physiology and ‘digital explanations.’**

**Source:** Nurse Education in Practice

**In a nutshell:** If you though Brexit was complicated the inner workings of the human body are truly mind boggling. Anatomy deals with the overall structure and framework whilst physiology tackles the flow of stuff within it. Nursing students can find both a struggle and in this study Shahla Meedya, from The University of Wollongong in Australia, led a team of researchers investigating a new way of teaching anatomy and physiology. The researchers got the students making ‘digital explanations,’ – adding audio narrations to different forms of digital media such as still images, slowmation, videos, text-on-screen and blended media. 428 students took part in the study. Two-thirds had previous experience with science but only 24% had previous experience with making digital media. After completing the assessment task two-thirds of the students strongly agreed or agreed that they learned more about science and fewer students agreed that searching for scientific knowledge could be boring. Four themes were identified in interviews with students: ‘learning about science,’; ‘linking knowledge to practice,’; ‘using technology,’; and making it real. However, many students were challenged by the technology and the fact that the task was ungraded.

You can read the abstract of this article here.

**Culture, language, and clinical placements**

**Source:** Nurse Education in Practice

**In a nutshell:** Just as it’s hard to imagine how newspapers would fill their pages without Brexit this bulletin would be a lot slimmer without discussions of nursing students struggling in their clinical placements. These problems can be made worse by differences in culture and language barriers and in this study Heidi Korhonen, from the University of Oulu in Finland, led a team of researchers who questioned 133 culturally and linguistically diverse healthcare students about their experiences. The researchers found that the students’ experiences were related to their mentors’ competence in mentoring, a ‘culturally diverse pedagogical atmosphere,’ and aspects of diversity that influenced clinical learning. The students said that they had experienced social isolation, discrimination, bullying, sexual harassment and prejudice during their clinical placements.

You can read the abstract of this article here.
Stress and the clinical placement
Source: Nurse Education Today

In a nutshell: Also tackling the vexed topic of clinical placements was a team of researchers led by Shoa-Jen Perng, from Tzu Chai University of Science and Technology in Taiwan. They studied 814 nursing students with an average age of 18.9 years. The students who were least interested in their clinical placements had significantly higher levels of stress. Of the various strategies for stress relief listening to music (75.2%) was the most popular choice, followed by talking to a friend (72.3%) and catching up on sleep (61.3%).

You can read the abstract of this article here.

Going on the wards and getting the dress rehearsal right
Source: Nurse Education Today

In a nutshell: Rather like troop numbers at the end of World War One there are never enough nurses and the new ones that start don’t always last the first year. Nursing students’ final clinical placements are the last chance to get their confidence up and their skills honed before they start work as fully-fledged nurses after qualification. In this study Kählänen Anu-Marja, from the National Institute for Health and Welfare in Finland, led a team of researchers looking at the links between how well a student’s final placement went and their subsequent likelihood of dropping out during their first year of work. They found that the students’ final placement experience was “associated with all domains of the transitional experience and turnover intentions. The association between the practicum [placement] and turnover intentions was partly mediated by the emotional (psychological distress) and socio-developmental (role conflict and ambiguity) domains of the transition.

You can read the abstract of this article here.

Nursing students behind the bike sheds
Source: Nurse Education Today

In a nutshell: Nurses and doctors aren’t always paragons of virtue when it comes to looking after their own health. Doctors have been spotted smoking and drinking too much while on occasions nurses have been seen eating chips and tackling boxes of chocolates. In this study Liang-Nan Zeng, from the University of Macau, led a team of researchers reviewing studies into what percentage of nursing students smoke. The researchers found 46 studies that met their quality criteria and found that the ‘pooled prevalence,’ of current smoking was 26.6% while the pooled prevalence of previous smoking was 15.5%. The researchers concluded that “considering the negative impact of smoking on health, appropriate smoking cessation measures for nursing students should be developed.”
Paid work and academic performance

**Source:** Nurse Education Today

**In a nutshell:** Most students work during their holidays and some work during term time as well. Work can employ people’s employability skills but it can also tire people out and take time away from them when they should be studying. In this study Yenna Salamonson, from Western Sydney University, led a team of researchers looking into the links between the type and amount of paid work first-year nursing students did and their academic performance. 1,314 students took part in the study which found that there was an inverse relationship between the time spent in weekly paid work and academic performance. Three predictors emerged as statistically-significant for higher marks which were: engaging in non-nursing related work; not being the first in one's family to go to university; and being a school-leaver rather than a mature student.

You can read the abstract of this article [here](#).

Can working abroad make you kinder?

**Source:** Nurse Education in Practice

**In a nutshell:** Many students choose to work abroad during the course of their studies. But apart from getting a suntan, perking up one’s Instagram feed, and opportunities for duty-free shopping are there any other benefits to it? In this study Ingrid Gilje Heiberg, from Western Norway University of Applied Sciences, led a team of researchers investigating the experiences of student nurses undertaking international practice modules between 2005 and 2017. The researchers found that experiences of being vulnerable abroad strengthened students' abilities as carers and that “relational characteristics like attentiveness and attunement with others are strengthened whilst [sic] abroad.”

You can read the abstract of this article [here](#).

Does working abroad make you cleverer?

**Source:** Nurse Education Today

**In a nutshell:** Also looking into the benefits of working abroad were a team of researchers led by Heather Englund, from the University of Wisconsin Oshkosh. In this case they were looking into the links between “international clinical experiences,” and academic performance. The researchers found that the students who had had the international experiences actually performed worse in their exams. They thought this might be because the students had been abroad long enough to suffer disorientation and culture shock but not long enough to adapt and start to learn anything.
Does working abroad give you professional values?

**Source:** Nurse Education Today

**In a nutshell:** You wait ages for a study on the benefits – or otherwise – of working abroad and three come along all at once. Adding to the evidence – which now has almost as many instalments as *Star Wars* – is Heather Ferrillo, from Sacred Heart University in Connecticut. She compared undergraduate students taking part in a one-week international service-learning initiative as part of their clinical hours with students who did not go abroad to work. She found that “the use of international service learning as part of clinical was at least equivalent in the development of professional nursing values as traditional clinical. In addition, it supported the development of professional nursing values through clinical learning overall.”

You can read the abstract of this article [here](#).

What makes a good critical thinker?

**Source:** Nurse Education in Practice

**In a nutshell:** Like meditation and eating five pieces of fruit and veg a day critical thinking is one of those things everyone thinks is a good idea but few people engage in. It’s defined as “a cognitive process that includes a rational analysis of information to facilitate reasoning, judgment and decision-making,” and is widely accepted as being associated with the provision of quality care. But are certain people more likely to do it than others? In this study Esperanza Zuriguel-Pérez, from the Hospital Vall d’Hebron in Barcelona, led a team of researchers studying 339 nurses in an attempt to get to the bottom of this issue. The nurses reported ‘moderate,’ levels of critical thinking. Older nurses, with 11-15 years’ experience, a permanent contract and a master’s degree indicated a higher level of critical thinking.

You can read the abstract of this article [here](#).

Helping nurses keep the pressure off

**Source:** Nurse Education Today

**In a nutshell:** People who sit or lie in the same place for hour after hour – the old in care homes, people in wheelchairs, MPs debating Brexit – are at risk of developing pressure sores so it’s important nurses know how to prevent them from occurring. In this study Yukyeong Seo and Young Sook Roh, from Chung-Ang University in Korea, compared the effectiveness of team- and lecture-based learning for teaching nurses in long-term care hospitals about pressure-sore prevention. The researchers found that both groups showed significant increases in their scores for pressure-ulcer-
prevention knowledge, behaviours, and attitudes but that there were no significant differences between the two groups in terms of how much they had learnt.

You can read the abstract of this article here.

Making evidence-based practice seem worthwhile
Source: Nurse Education in Practice

In a nutshell: Many librarians are called upon to pontificate on evidence-based practice in front of healthcare students the results ranging from light restlessness to brutal humiliation. In this study R.T. Disler, from the University of Melbourne, led a team of researchers who redesigned an undergraduate research subject to make clearer the connection between research and professional nursing practice. The researchers found that the students’ satisfaction improved significantly over a year. Open-ended questions about the change elicited five themes which were: change to preconceived ideas of research to something accessible and useful; clear link between research and clinical and professional nursing practice; comments on subject format and scaffolded learning; increased skills in effective searching and extracting evidence; and improvements for the future. “Student satisfaction increased when the connection between research learning and professional practice was made overt in a core research project.”

You can read the abstract of this article here.

Teaching creativity to teachers
Source: Nurse Education Today

In a nutshell: Whether you can teach people to be creative is a moot point, teaching people to teach people creativity even more so. In this study Hsing-Yuan Liu, from Chang Gung University of Science and Technology in Taiwan, led a team of researchers studying the effect of a teaching-for-creativity module to enhance teaching and teaching creativity for nursing lecturers. A two-day creativity workshop was followed by reinforcement of creativity skills in the classroom. 42 lecturers took part in the study. 21 took the new course and the rest formed a control group. The group doing the creativity module had significantly better scores for creative teaching behaviour and self-efficacy of teaching creativity. “Our findings suggest participation in a creativity workshop and reinforcement of teaching skills with classroom and interdisciplinary training can augment teaching for creativity of nursing faculty.”

You can read the abstract of this article here.
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