

Care, compassion, educational scholarship and innovation form the foundations of my career. Students and their experience my *raison d'être*. Combining the careers of a clinician (providing care to the most vulnerable infants in society) and an educator has been rewarding but challenging. My clinical grounding allows me to constantly evaluate, inspire and improve the training of the next generation of doctors. Not satisfied with educational excellence I have sought to transfer my educational expertise into benefitting patients and their experience through the technologies I have developed for education. My work in academia has profoundly influenced my clinical work by instilling in me the need to seek evidence, justify innovation and to work with stakeholders to effect meaningful and lasting change. This body of work and innovation is sustained and evidences a commitment to personal and institutional excellence in education.

I am passionate about inclusive education that strives to create environments that allows students of all backgrounds irrespective of social class to realise their true potential. Throughout my busy and internationally prestigious career, I return to my guiding goal: to improve the experience of medical students and trainees in order to create and support the best doctors. By balancing responsibilities in teaching and research, I have been able to contribute to improvements in medical education at local, regional and international levels through influencing policy, practice and innovation both within my discipline and elsewhere.

Individual excellence

As a graduate of medicine, the first 10 years of my postgraduate career were focussed on acquiring the knowledge, skills and experience to provide the highest standards of clinical care. In 2015, as part of my professional revalidation, I participated in 360-degree evaluation of my clinical practice. A mean weighted score of over 4 being defined as outstanding saw patient scoring of 4.8 with professional peers rating me at 4.4.

"He was a lovely doctor who explained everything very clearly and treated my son as an adult rather than a child" **Patient Feedback Picker Survey 2015**

“... an efficient member of team who not only communicates effectively but gives importance to others' views and explains things very well to colleagues and parents ”

Peer Feedback Picker Survey 2015

Included within my clinical role is an expectation to teach and train. Mean scores amongst colleagues and trainees for teaching, supervision and assessment were rated as outstanding (mean 4.64).

“Gives fair and useful feedback ... encourages questions which he explains effectively. Gives value to other peoples' opinions and takes their views in to consideration.” **Trainee feedback Picker Survey 2015**

On reflection, it is here that my vocation for education began, grounded in the everyday practice of medicine. Assuming leadership of the Royal College of Paediatrics and Child Health (RCPCH) tutor at the Royal Preston Hospital in 2005 introduced me to the teaching, supervision, assessment and pastoral care of junior doctors in training leading to a prestigious Foundation Programme Director role for the Hospital Trust in 2007. Responsibilities included the delivery of the Foundation Training Programme for 112 trainees in Preston and a link to the wider regional deanery. A Training Programme Director for the Northwestern Deanery School of Paediatrics followed (2009) leading a professional training programme for over 80 paediatric trainees. Recognition at a national level came when I was asked to take leadership in the re-design of the workplace based assessment programme (procedures strand) for the RCPCH. Training the next generation of Paediatricians has been an extremely rewarding and fulfilling role which was recognised by my Hospital Trust in the form of two Clinical Excellence Awards.

“The decision to make an award in your favour demonstrates the high regard in which you are held by your colleagues...” **Karen Partington Chief Executive Lancashire Teaching Hospitals NHS Foundation Trust**

In 2009 I was recruited by the University of Manchester in recognition of my profile within postgraduate education and led to my completion a Masters in Medical

Education at the University of Cardiff in 2012. This was the most challenging period of my career, balancing a young family, acute clinical practice and the study of educational theory. In addition, I had to learn the disciplines of academic writing and research rigour within a completely novel field. These three years provided the theoretical foundations that have informed my work in medical education.

As lead of eLearning, I initiated a flagship project to evaluate the use of iPads to enhance assessment, teaching and learning. In 2011 I succeeded in writing a pedagogically-sound business case to the University. Manchester became the first medical programme outside of the United States to adopt tablet technology on a large scale. Under my leadership Manchester Medical and Dental Schools deployed over 700 iPads to students in what remains one of the largest projects of its kind in the world. The project's overarching aims were to enhance the student experience by:

- Providing equitable access to cutting edge digital learning technologies
- Facilitating authentic and clinically-relevant learning and assessment
- Providing a wireless infrastructure to facilitate student learning

A successful pilot resulted in the medical and dental programmes now deploying over 2000 iPads at any time. This technically challenging project required me to demonstrate significant communication and leadership skills to ensure close liaison between a wide range of university and NHS departments. Wireless provision within the NHS was expanded from 25%(of associated teaching hospitals trusts) to 100% within one year through direct liaison with NHS information technology teams. Planning, technical expertise and above all determined leadership were required to ensure this ambitious infrastructure project was completed successfully. The integrated evaluation underwent rigorous analysis and was published in a peer reviewed journal thereby sharing practice.

Fundamentally students and their experiences are what drive my work but they are also partners who were instrumental in identifying the benefits, pitfalls and avenues for development that made the project such a success. Student advocates worked

closely in conjunction with me to make the case for the use of tablet technology and demonstrated their utility within the clinical programme subsequently presenting their experiences to the University board of governors.

“...the iPad and apps are very helpful and advanced. Congratulations. I'm proud to tell people that the medical school is giving us iPads” and “I've been using the iPad on the bus, train and in between. It's been hugely useful” **Student Feedback**

“The students were fantastic and the mutual respect of staff and students tangible. I was able to explain afterwards to the Senior Leadership Team that this is just one of many transformational initiatives you are leading.” **Professor Ian Jacobs Dean of the Faculty of Medical and Human Sciences**

The project contributed significantly to the improvement in the National Student Survey score of the medical school. 2013 saw the first graduating cohort of students. The most profound areas of improvement were within Teaching, Assessment, Organisation and Feedback with the latter domain seeing a 19% improvement from 2011-2013. The improvement has been sustained in subsequent years evidencing a lasting impact on the student experience.

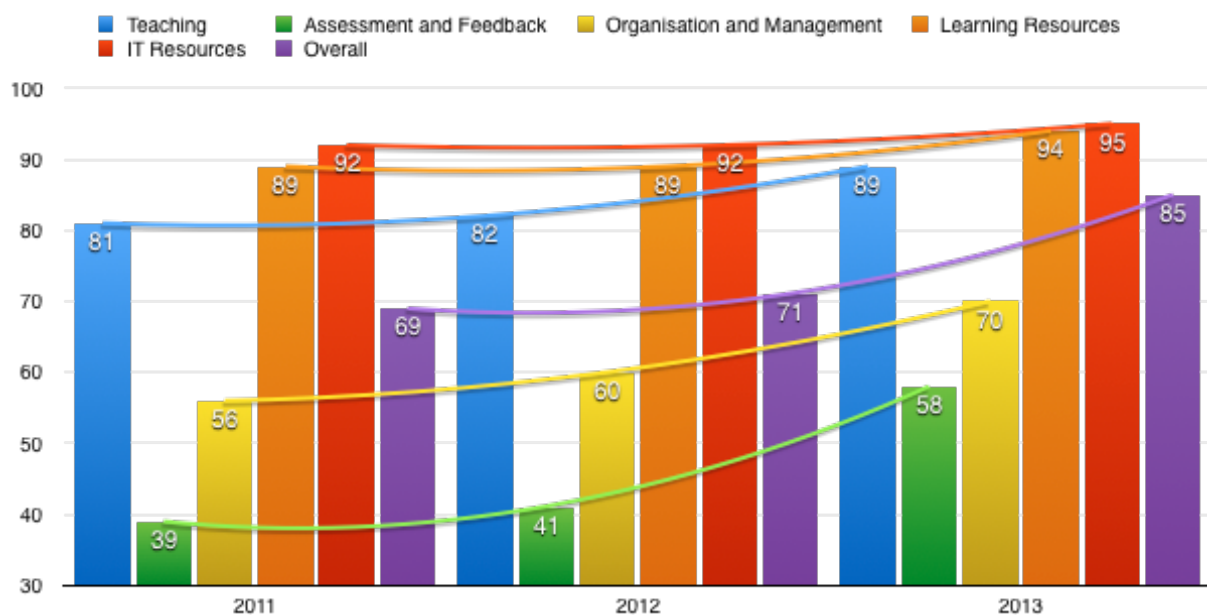


Fig 1 Impact on National Student Survey (12 words)

“his flair for original thought is learner-driven and he engages all students with compassion and wit. As an educator role model, he has few equals. This unique combination has given Colin a place on the national and international ‘Technology-Enhanced Learning’ stage” **Professor Ged Byrne Director of Education and Quality Health Education England (North)**

The Medical School through a combination of my design and leadership, has developed a range of tools including a bespoke data capture system and virtual learning environment that have facilitated and integrated tablet computers within the programme. These innovative and ground breaking resources were recognised by the General Medical Council in an external review of the programme and listed on their site as an exemplar of notable practice.

“The way in which Manchester Medical School uses the tablet computers is commendable and innovative.... they are always looking for new ways to make use of the tablets and online resources.” **GMC Feedback from regional review 2013/14**

My work has resulted in the profile of the University being raised nationally, internationally and within industry. The school was recognised as an Apple Distinguished Programme in 2015 becoming the first Higher Education Institution in the United Kingdom to be awarded this prestigious accolade.

“The Apple Distinguished Program designation is reserved for programs that meet criteria for innovation, leadership and educational excellence, as well as demonstrating a clear vision of exemplary learning environments. The Medical School’s recognition is due to the exemplary and innovative work being carried out by tutors and students in using the iPad to both create and deliver content ” **Apple Computers**

My drive to continuously improve processes and systems to augment learning experiences for both staff and students is inexhaustible. An exemplar of this was the extensive use of paper forms within the medicine programme which were difficult to content manage and distribute. I designed, commissioned and implemented an

automated electronic version (Form²) which reduced completion time and improved accuracy. One application of the system within assessment saw examiner errors on mark sheets reduced from 50% to 0.3%. The system was commercialised in 2015 following unsolicited enquiries and is currently used in numerous schools within the University but also licensed by six Universities including Queensland Australia demonstrating the global impact of my work. The Advanced Life Support Group is a medical education charity providing life support training courses in 45 countries having trained over 180,000 people over 26 years.

“ALSG implemented Form² to provide more streamlined and effective working with our training centres, instructors and candidates around the world.” **Sue Wieteska**
Chief Executive Officer ALSG

Raising the profile of excellence

The iPad project has gained national and international recognition with other universities looking to follow Manchester’s lead. My extensive experience in educational technologies has had a direct impact on programmes elsewhere. Numerous national and international healthcare programmes have sought my advice with related projects and have benefitted from my expertise and novel approaches.

“What you did is a million miles from our IT projects which tend to be planned from start to finish before anything is approved. This cuts out the potential there is for a project to grow and evolve which is what they almost always tend to do” **Dr Phil**
Langton University of Bristol

This recognition was noted by Apple Computers with invites to consult globally. I am a regular speaker at national Apple leadership conferences and have received excellent feedback for these presentations consistently receiving the highest evaluation scores amongst the speaker list. My influence has been seen elsewhere internationally by widening perspectives on the use of technology. The University of New South Wales significantly changed the focus of their technology programme resulting from a seminar held in Sydney 2014. I was able to highlight the myriad of

educational uses that tablets provide rather than simply for the purpose of assessment.

“His achievements influenced us to change our focus of mobile technology from assessment to students’ learning needs.” **Professor Philip Jones Deputy Dean Education UNSW Medicine**

I have also influenced how medicine is delivered within clinical environments stimulating projects which have blossomed into world leading resources.

“Colin ... convinced my board that it could work as a Mobile Learning Initiative in Amsterdam as well. When we started to change the way of teaching and learning, we already started to change the work in our hospitals as well.” **Dr Jochen H. Bretschneider Project lead Mobile Learning Initiative VU University Medical Center Amsterdam**

I have been able to impact the wider Undergraduate and Postgraduate student experience across the University and the library. The paradigm shift in the provision of personalised learning required novel thinking and approaches out-with my own expertise. One such challenge was the provision of library content and the shift from a predominantly paper-based offering to a digital library of resources. Through my leadership, innovation and close teamwork with colleagues from the Library I was able to completely revolutionise the way students access and interact with learning materials and content.

“Colin helped us to explore new models of e-textbook delivery via tablet and mobile devices, liaising with publishers and service providers to review and drive the development of new interactive, downloadable, and device agnostic resources. This in turn has helped form the basis for change in the Library’s broader approach to content purchase; moving from a traditional model of purchasing content (owning it) in perpetuity, to licensing access to online content, challenging publisher institutional pricing models, and allowing us to take greater control in our negotiations in trying to achieve an equality of access for all students.” **Olivia Walsby Academic Engagement Librarian, The University of Manchester Library**

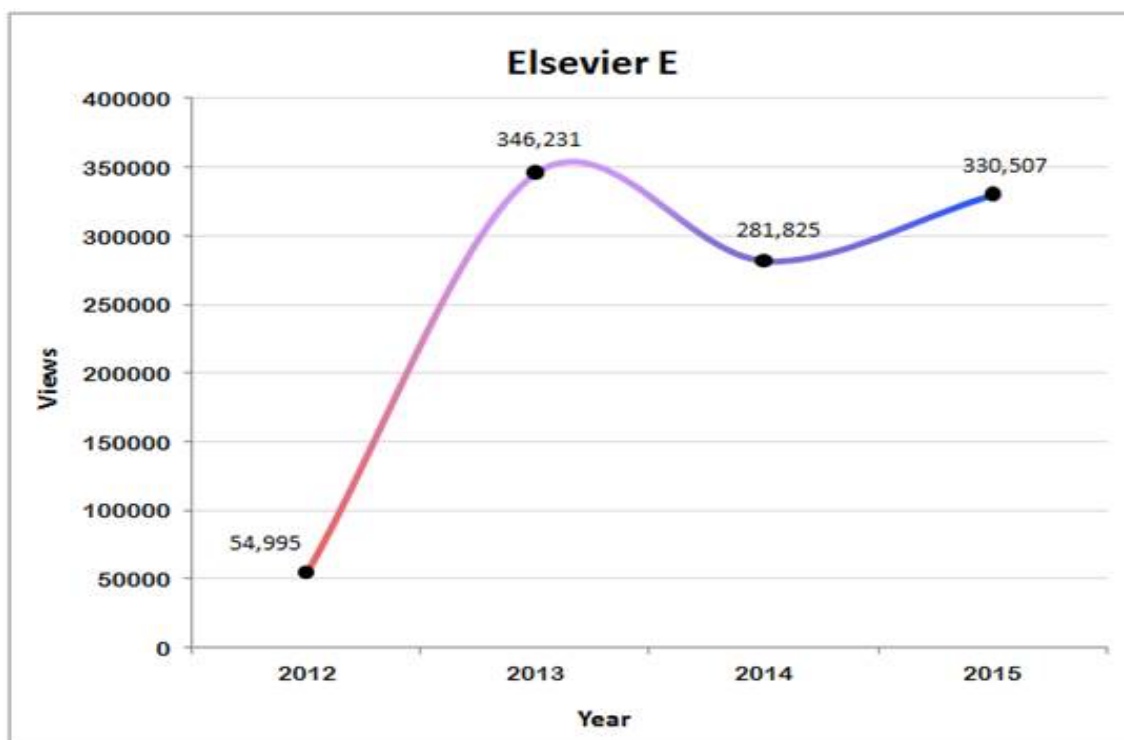


Fig 2 Change in access of electronic texts following iPad project (4 Words)

Taking a scholarly approach to my teaching and leadership, I worked closely with a team of education researchers to rigorously evaluate the utility of tablets in medical education leading to the publication of six papers in peer reviewed journals and a UCISA Best Practice Case Study. I have fed these research findings into the ongoing project. My leadership in the development of a mobile learning research group has resulted in continuing educational research in this emerging field. It has also provided opportunities for undergraduate and postgraduate students to be involved in educational research with four students to date being listed as co-authors in peer reviewed journal articles. My international profile has facilitated a worldwide research project investigating the use of social media in undergraduate medical education with the paper subsequently being voted Article of the Year 2016 by the European Association for Health Information and Libraries. My standing in the field of medical education resulted in a commission to author the Medicine and Dentistry chapter of the HEA handbook for Teaching and Learning in Higher Education.

'He is a truly committed academic, with real dedication for making both curriculum and its innovative development serve both students and excellent practice well.'

Professor **Stephanie Marshall, HEA Chief Executive**

My background and continued work within healthcare has seen me strive to bring my innovations full circle and benefit the NHS. Form² was adopted by the Northwest Paediatric Allergy and Immunology Network launching in April 2015 and collecting data from 8 geographically distributed sites. The data is being used to shape the services of the future demonstrating radical thinking and innovative practice to change the face of clinical care. I am working together with clinical and academic staff to translate my educational expertise into improved and more efficient patient centred outcomes.

“he has developed a whole new way of using e-learning to: educate, assess, maintain contact, flag up patient care issues and link into critical groups Colin has an insight and technical expertise that is significantly in advance of educational need.” **Prof Tony Freemont Head of Undergraduate Medical Education University of Manchester**

“Above all, Dr Lumsden is an innovator; he has taken new technologies and applied them to dispersed educational settings to ensure standards are upheld, variabilities in delivery are minimised and assessment processes are undertaken in real-time and recorded accurately.” **Professor Mark Pugh Medical Director Lancashire Teaching Hospitals NHS Foundation Trust**

I have had a positive influence on the next generation of educational leaders within the medical school. I have mentored and supported clinical academics; working closely with them I have advised and guided their work as well as seeking their contributions to curriculum design and scholarship.

“Colin has provided academic guidance and inspired my academic career through our work together in curriculum innovation.” **Dr Matthew Jones Senior Lecturer and Honorary Consultant Neurologist**

“I found a mentor of rare talent, who enabled me to take my locally delivered tutorials into the mainstream of undergraduate medical education.” **Dr Anubha Trehan**
Senior Lecturer and Consultant Acute Physician

Developing excellence

I take pride in my professional development completing an MSc in Medical Education at University of Cardiff. As part of this I won the best education resource submission. These new skills were translated into educational innovation within the MBChB programme. Students at Manchester had become frustrated with the pedagogy of the programme and expressed this in their NSS returns. Using my experience of clinical study and educational theory I translated pedagogy into a project designed to deliver the curriculum using evidence based methods. In 2015 I designed and piloted a research project around the implementation of the Flipped Classroom amongst a small cohort of students. By applying lessons-learnt in the pilot, I designed a teaching method that could be rolled out across four disparate hospital sites simultaneously. I drew on previous successes in the iPad project to build an innovative approach using WordPress as a means of delivering online materials promoting student-led learning. The project necessitated the recruitment, training and support of content authors and clinical tutors from the NHS. The implementation ran over 24 weeks being delivered simultaneously across 4 sites to 457 students. The programme has been enthusiastically received by both students and clinical staff. Early evaluation of the programme has shown high levels of satisfaction with the learning method and improved performance of students within assessments.

“I am a PBL graduate from Manchester and I can see this system working much better than the old PBL. The students were already prepared and had background knowledge of CCF so made it very interactive and did lead to interesting discussions.” **Clinical Tutor Central Manchester Foundation Trust**

“I feel like I learn a lot more I don't like the pbl we did in year 1 and 2 I didn't used to feel involved now I feel involved It feels like a group discussion and it's very relevant to real life situations” **Student Evaluation**

In addition to the implementation of my own work I have facilitated the delivery of a parallel session by bringing together the secondary theme leads of the programme. These theme leads created an integrated approach entitled Patient Centred Consulting which is again delivered across four hospital sites. These innovative sessions run over 24 weeks and include communication, ethics and law, prescribing, behavioural and social science, patient safety and the humanities.

Leadership requires development and my drive to develop saw me undertaking the University of Manchester leadership development programme (Headstart) in 2014 which has directly influenced my development as a leader within Manchester. In recognition of my longstanding interest in (and scholarship within) Medical Education I was asked to lead the delivery of a revised MBChB Programme (Year 3). The MBChB programme is extremely complex straddling academia and clinical training with the clinical years of the programme being delivered within a highly challenging and pressurised learning environment. This was the first major revision to the programme for over 20 years and launched in August 2016. The project included the provision of over 2300 clinical placements with a tightly designed specification and requirements. These requirements were conceived, approved and implemented in my role as project lead. It included creating a clinical skills syllabus (a first for Manchester), implementing an electronic student record of skills to provide robust evidence of student engagement and attendance, defining and agreeing the summative sign-off of clinical placements, implementing a real time evaluation of placements and ensuring tight alignment of the curriculum content and assessment. My leadership skills were required to engage a wide variety of academics, clinicians and professional support staff.

My design of the programme included the contemporaneous collection of clinical placement evaluation data in a robust manner. The design of this ensured over 99% completion of evaluation data from 2334 clinical placements over the course of the 24 weeks of clinical placements. The mean placement satisfaction scores for all of these was over 86% in the context of an NHS under enormous strain during this academic year. Included within this overall satisfaction was the commissioning and delivery of placements within a new multi-site hospital trust. These new placements received an 83.6% satisfaction rating in the first year of implementation.

“Colin has demonstrated outstanding leadership skills in designing and implementing the revised Year 3 programme. His ability to recognise and address the concerns of multiple stakeholders, including those of students, staff and organisations, has been essential in delivering (successfully) a complex educational project.” **Douglas Corfield, PhD** | Professor of Medical Sciences | Head of the Division of Medical Education and Head of the MBChB Programme

“Overall, there was a lot of positive feedback on different elements of the programme. Students were in general very satisfied with the year overall and teaching that they have received.” **Student Focus Group Data Salford Royal Hospitals**

The successful delivery of the programme revisions has led to my appointment as a programme director for educational development and innovation and as the divisional Lead for Business Engagement. The latter role is recognition of my role in supporting licensed programmes and the commercialisation of our software platforms. In recognition of my pedagogical grounding and deep understanding of the MBChB I have also been appointed as chair of the curriculum committee providing academic oversight for the curriculum and ensuring delivery of the outcomes defined by our external regulatory bodies.