

Educating for Connected Health: Sustaining personhood in a digital world

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**For education
in healthcare**

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1 Introduction

The relentless growth and diversity in technology aimed at automating healthcare delivery arguably challenges healthcare professionals' central position in care delivery as new technologies augment or replace healthcare activities. Although not a new phenomenon, this paper argues that the scale of change in the triadic relationship between the person receiving the service, the healthcare practitioner and the computer, requires us to rethink our relationship with technology.

The emergence of a digital humanism provides healthcare professionals with the opportunity to be active influencers rather than passive bystanders, in order to ensure that personhood remains central to how healthcare is delivered.

2 Transformative power of technology

It is somewhat of a cliché to say that technology is having a transformative effect on our everyday lives. From communication to transport and from retail to entertainment, much of what we take for granted today, was unimaginable even a few years ago. Some say we are in the midst of a fourth industrial revolution, which is said to be more rapid and impactful than any of the previous three. In 2016, Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, suggested that this digital revolution is *"a fusion of technologies that is blurring the lines between the physical, digital and biological spheres"* (Schwab, 2016, p.1).

There has been no precedent for the speed, scope and impact of this revolution, which perhaps explains why society is struggling with some of the effects and unintended consequences.

Of course, healthcare has been transformed too. Many aspects of a person's journey through diagnosis and treatment potentially have a digital 'solution'. From automated triage that improves access to treatment, to diagnostic devices that automate previously manual readings; from robotic surgery with reduced human error, to automated drug dispensing and delivery; from data supporting clinical decisions, to the supply of predictive analytics.

We have also seen the emergence of connected health, which uses technology to provide an increasing number of services remotely. The possibilities seem endless and the availability of big data in particular has the potential to enable targeted prevention, improved efficiency and strengthened treatment protocols.

For a person like Jean, 52 with a diagnosis of Type 2 diabetes, digital technology can be a useful adjunct to everyday life. It allows her to track her blood insulin and adjust her dosage to suit her level of activity; to access information relevant to her specific circumstance easily; to chat to people in a similar situation via social media; to consult experts through telephone or video-conferencing; and to receive reminders to exercise if she has been sedentary.

The opportunities for interdisciplinary co-ordination, continuity and management of care are also significant. The remote involvement of nurses, nutritionists, GPs, consultants and other healthcare practitioners, enables Jean's team to interact and share records of interventions, thereby avoiding duplication or, even worse, oversights. When effective, Jean can be fully involved in treatment decisions and can receive 'nudges' that remind her of appointments, follow-ups and new innovations/treatments, so that her condition is carefully monitored and her health maintained.

3 Uptake of technology

However, despite the rapid uptake of technology in areas such as mobile banking, e-commerce and music/video-streaming, uptake in health has been somewhat slower by comparison. One possible explanation for this is a generational issue because many current teachers and senior leaders have had to adapt to the new digital environment, and may perhaps be less inclined to embrace new technology.

Mark Prensky (2001) coined the term 'digital immigrants' to describe those who he considers speak an outdated language (that of the pre-digital age) and who struggle to relate to a digital generation who speak an increasingly 'foreign' language. The digital or 'net' generation, described as 'digital natives', are familiar with the language of computers, gaming and the internet.

Although this native/immigrant argument provides a useful perspective, it seems too simplistic to explain the whole story. There is now a body of research exploring why take-up of health technology has been relatively slow. Using the Technology Acceptance Model (TAM) (Davis *et al.*, 1989), which is an information systems theory that models how users come to accept a technology and how they use that technology, studies are now being conducted to understand the barriers and enablers to technological engagement.

The TAM model suggests key factors that influence our decision to use technology, including perceived usefulness, which is the degree to which it is believed that technology will enhance job performance, and perceived ease of use and relative effort involved. In health, knowing whether peers would adopt technology or service users would value it are equally important.

Understanding attitudes towards, and perceptions of, technology is critical in healthcare. As long ago as the 1980s, writers such as Sherry Turkle – the Abby Rockefeller Mauzé Professor of the Social Studies of Science and Technology at the Massachusetts Institute of Technology – were warning of the potentially dehumanising effects of technology that increasingly define the way we think and act in this digital age. In her book, *The Second Self: Computers and the human spirit*, she talked about the computer's relentless threat to the "I" (Turkle, 1984).

Similarly, Joseph Weisenbaum, another MIT professor of computer science and also the father of modern artificial intelligence, suggested that the computer – linear, logical and rule-governed – encourages us to think in these ways which, he argues, makes us privilege instrumental reasoning over human engagement and interaction. He asserts that "*it is the capacity to choose that ultimately makes us human*" (Weisenbaum, 1976, p.10) and in healthcare it is these choices, interactions and person-centred interventions, that are critical to the care of those who are vulnerable due to ill-health or disability. In fact, in his 1976 article entitled 'Computer power and human reason', Weisenbaum argued that artificial intelligence technology should never replace those people who work in positions that require respect and care, such as healthcare practitioners, police officers, soldiers, judges, therapists or customer service representatives.

But in spite of these warnings, we have seen technological design move towards much greater automation in recent years with, arguably, little consideration of the experience, attitudes and beliefs of the end user. One only needs to consider current use of the automated telephone answering machine to see how little attention has been paid to what it feels like to be kept hanging on the line in a queue for what seems like hours, listening to distorted and piped music.

In healthcare, any number of service user surveys emphasise the necessity of person-to-person interaction and human contact. As Youngson (2016) highlights, we have good evidence from randomised controlled trials that compassionate, person-centred care improves clinical outcomes. For example, we know it is our ability as healthcare professionals to provide empathic and supportive, pre-operative consultation that improves wound healing and surgical outcomes, halves

opiate requirements and reduces length of stay in hospital. Furthermore, we know that people receiving treatment in emergency departments are 30% less likely to return if treated with human compassion (Youngson, 2016).

We are also aware from recent surveys into why people leave the nursing profession, that it is the opportunity to deliver compassionate care that provides meaning and satisfaction to those delivering care. Such care aligns with professional practice ideals and helps to protect against the risk of burnout, which are typical reasons for choosing to remain or leave a job (Tee and Scammell, 2018). Person-centred care is, therefore, a positive force for good and not just for service users, but healthcare professionals and service providers too.

But, while we are in the midst of this digital revolution, the question needs to be asked, 'Can compassionate, person-centred care be delivered in an increasingly automated, digitally driven world?' How does this stack up in an environment in which more and more practice, services and treatment will become automated, detached from human experience and alien to service users?

4 The imperative for a humanised focus

We only have to look at some of the recent tragedies and examples of appalling standards of care, when what Galvin and Todres (2012) call 'humanly sensitive care' is missing. In response, Bournemouth University has been researching and promoting humanising practice as a key theme in its nursing curriculum for some years now. This is essentially about listening to, and acting on, what people that use services are telling us. Too often they feel they are not engaged as human beings.

Within the debate about how to restore humanly sensitive care, following the tragedy that was Mid Staffs¹ (Francis, 2013), the view taken at Bournemouth was that this is not just about 'more time' or even 'better leadership'. Rather, it's about how the 'humanising focus' is clearly articulated and maintained as a primary focus for practice, particularly in this digital age.

Galvin and Todres (2012) suggest that sustaining a humanised focus is based on two foundation pillars on which other strategies, such as leadership, resources, organisation and training, are built:

Pillar 1: A distinctive and simple 'vocabulary' that keeps the focus on 'humanising' issues as a central concern; and

Pillar 2: Ensuring that such a focus is coherently championed at all levels: political, organisational, practical and educational.

In their research, the main question that Galvin and Todres asked was simply 'What makes people feel "more human" or "less human" when engaging in health and social care systems and interactions?' The outcome is a Conceptual Framework of the Dimensions of Humanisation that articulates eight bipolar dimensions (Todres *et al.*, 2009). These bipolar dimensions describe health and social care processes and interactions that are 'humanising', and those that are 'dehumanising' (see table below).

¹ 'Mid Staffs' is shorthand for the Mid Staffordshire NHS Foundation Trust scandal, which highlighted poor care and high mortality rates amongst patients at the Stafford Hospital, England. Between 400 and 1,200 patients died as a result of poor care over the 50 months between January 2005 and March 2009. The final report was published by Sir Robert Francis in 2013 <http://webarchive.nationalarchives.gov.uk/20150407084231/http://www.midstaffspublicinquiry.com/report>

Forms of Humanisation	Forms of Dehumanisation
<i>Insiderness</i> <i>Agency</i> <i>Uniqueness</i> <i>Togetherness</i> <i>Sense-making</i> <i>Personal journey</i> <i>Sense of place</i> <i>Embodiment</i>	<i>Objectification</i> <i>Passivity</i> <i>Homogenisation</i> <i>Isolation</i> <i>Loss of meaning</i> <i>Loss of personal journey</i> <i>Dislocation</i> <i>Reductionist body</i>

The humanising dimensions are those characterised by maintaining personhood and include Insiderness, Uniqueness, Togetherness and Embodiment. Meanwhile the polar opposites are the dehumanising dimensions, where personhood is diminished, such as Objectification, Homogenisation and Loss of meaning.

I want to look at just two of these dimensions in more detail. Firstly, uniqueness vs homogenisation. Our uniqueness as human beings, Galvin and Todres argue, cannot be reduced to a list of characteristics such as age, gender and ethnicity; each of us is unique in relation to our relationships and our context, and this is how we see ourselves. De-emphasising our uniqueness through automated systems and digital processes potentially separates individuals from the context of their life. In other words, we need to consider an individual's context, carers, friends, family and home, and balance any generalisations that hide characteristics that make people uniquely who they are.

Secondly, embodiment vs reductionism; this suggests we experience the world through our bodies in a range of ways that can be positive or negative. Therefore, an individual's biology cannot be understood without considering the psycho-social-cultural aspects. The term 'embodiment', Galvin and Todres suggest, relates to how we experience the world and includes our perceptions of the psycho-social-cultural context and its possibilities or limits. It may be affected by illness, changes in body image or ability.

These two examples illustrate how an overemphasis on digital processing, while at the same time failing to recognise the individual within their social context, can limit or inhibit our ability to respond to another human being in a caring and dignified way. Applying this analysis to all the dimensions of the model developed by Todres *et al.* (2009) clearly reveals that greater automation creates a higher risk that some form of dehumanisation and loss of personhood may occur.

5 How might healthcare professionals respond?

This paper is *not*, however, arguing that technology is inherently a bad thing as it clearly provides huge and recognisable benefits in healthcare. Rather, it aims to highlight the insidious risks, contending that we as academics, researchers, educators, clinical leaders and students, urgently need to engage, shape, inform and influence the future. In other words, to be what Todres *et al.* (2007, p.60) describe as '*a humanising force that moderates technological progress*'.

So how do we do this? One powerful way in which we can engage is through the lens of digital humanism, which suggests that people are – or should be – the central focus in the manifestation of digital workplaces (Petty, 2015).

Milad Doueïhi (2013), professor of digital humanities at Paris-Sorbonne University, describes digital humanism as:

“The result of a hitherto non-experienced convergence between our complex cultural heritage and a technology that has produced a social sphere that has no precedent.”

“Digital humanism is the affirmation that current technology, in its global dimension, is a culture, in that it creates a new context on a global scale.”

See <https://www.inaglobal.fr/en/ideas/article/about-digital-humanism>

Doueïhi is arguing that the current revolution in technology creates a new culture in which we as healthcare professionals need to engage far more forcefully. We have this opportunity because designers and technologists are recognising this dehumanising effect, and are seeking help. Digital humanism is the move away from computer-literate people to people-literate technology.

Not everyone, however, accepts this view of a new culture; for example, Professor Feisal Mohamed of the City University of New York, argued in a blog back in 2012 that:

“The sense that technology is inherently a form of progress, rather than a platform for consumerism, is one of the most insidious ideologies of our time, and one that distracts us from meditating on the true sources of human flourishing.”

However, the reality is that technology is here to stay and we in healthcare need to understand far better how technology interacts with how we as humans live, work and play.

Martin Recke (2017), Corporate Editor at SinnerSchrader, suggests that recent developments in machine learning and autonomous agents (Alexa, Siri or the self-driving car) and smart robots are all taking us along the same route – with increasing sophistication and inter-dependence on the interaction between humans and machines. As Recke points out, digital humanism refers, in short, to our long-held concern to put humankind in all its facets at the centre of technological development. This includes our work as healthcare professionals, as a good humanistic design would place the desires and needs of humans ahead of the most convenient or most accurate solutions.

We know from history that the early 14th century humanists started a cultural revolution which peaked in the Renaissance era and, so, as we survey the landscape and anticipate the technological future, perhaps now is the time for a new cultural revolution – a new Renaissance – in a humanised digital healthcare.

Of course, before this can happen there are many practical challenges to be overcome, not least of which is the preparation of healthcare professionals to engage with, and take advantage of, new technologies.

If we look at what the UK’s Nursing and Midwifery Council (NMC) says about technology in its 2018 education standards², registered nurses must be able to:

- *“demonstrate the numeracy, literacy, digital and technological skills required to meet the needs of people in their care to ensure safe and effective nursing practice”*
- *“demonstrate the ability to manage commonly encountered devices and confidently carry out related nursing procedures to meet people’s needs for evidence-based, person-centred care”*

² The NMC regulates nurses and midwives in England, Wales, Scotland and Northern Ireland and has a role in protecting the public. It sets standards of education, training, conduct and performance so that nurses and midwives can deliver high quality healthcare throughout their careers.

- *“effectively and responsibly use a range of digital technologies to access, input, share and apply information and data within teams and between agencies”*

Although engagement with technology is acknowledged, these NMC education standards hardly push the boundaries and there is little or no mention of the specific skills or leadership required to engage with technology. This seems far too passive when what is needed is for healthcare professionals to help shape the future.

More encouragingly, the Royal College of Nursing (RCN) launched a campaign in the UK in 2016, entitled ‘Every nurse an e-nurse’. This campaign sought to involve nursing staff in the design and implementation of information technology, increase access to education and training, and use data to improve care. This was supported by NHS Digital, which exists to improve health and social care in England by making better use of technology, data and information. In support, the Chief Nurse of NHS Digital, Anne Cooper (2017) stated:

“Embracing new technology is a help, not a barrier, to improving patient care. It is important that the professions respond positively to these opportunities and that's why being a modern nurse, in other words an 'e-nurse', matters.”

In 2018, the RCN published insights from a consultation on the digital future of nursing, following the launch of the ‘Every nurse an e-nurse’ campaign. They found that while there were examples of nurses taking leading roles in using technology, it was patchy and nurses often complained that technology was inadequate or that technologists did not understand their world. The RCN concluded that nurses needed to be empowered to take a leading role to bridge the gap between the worlds of healthcare and technology, and that it was no longer sufficient for either nurses or technologists to complain about being misunderstood.

6 Implications for education, research and partnerships

So how should we respond to this challenge? For me there are several key questions that need to be tackled:

- How can we protect service users’ best interests and ensure that personhood is central to the care we deliver, while embracing the possibilities that technology offers?
- How can we prepare healthcare professionals better for engaging with and leading healthcare in this digital age?
- How can we shape the future of technology in a digital world that is largely designed by well-meaning technicians focused on solutions rather than process?

Although there are few, if any, easy answers, my emerging thinking includes the following ideas. For nursing and healthcare to be part of and shape the digital healthcare future, I would argue that we need to tackle the three areas of education, research and partnerships.

In education this means we need to think carefully about workforce preparation and continuing professional development because we need people who can work with and understand technology, and can also work at the service-user interface. This includes:

- introducing digital humanities within pre-registration healthcare curriculum;

- providing in-service Digital Champions who can deliver one-to-one, learner-led support to build confidence and skills;
- creating customised programmes on digital therapies, to create new specialisms of digital healthcare professionals who understand the key components: coding, app development, data analytics – and also the nature of a humanised healthcare; and
- developing postgraduate courses that merge healthcare and digital technology to produce hybrid practitioners/researchers, who not only understand both technology and care, but also how innovation gets implemented and diffused.

We need to strengthen our research base to understand more deeply and influence the service user, healthcare professional and computer triad, through a digital humanist model by:

- further developing theory around digital humanism in healthcare;
- undertaking well-designed studies that incorporate human-/person-centred principles;
- sponsoring studies that employ quality improvement and implementation science principles and methods in order to determine what technologically driven improvement strategies are effective; and
- supporting matched-funded PhDs with universities and service providers that tackle key digital humanist questions.

We also need to explore wider partnerships with health, gaming and technology industry in order to support companies who are placing humanistic-based approaches and architectures at the centre of their design solutions, and who understand the principles of co-design and co-creation. This is about asking healthcare professionals the question, ‘What is the clinical problem you are trying to solve and how can we work with you?’ This should avoid what currently happens, which is that companies go to healthcare providers saying ‘Here’s a product that we’ve created, how can you help us to implement it?’

As Sian Kiely, the Knowledge and Information Manager at RCN Scotland, puts it “*Digital health is about more than the technology ... it’s about making effective decisions about patient care*”. This means that nurses and other healthcare professionals must have the opportunity to develop the essential skills and capabilities for working, influencing and, indeed, thriving in a digital society. Health Education England and the RCN (2017) categorise these competencies as follows:

- digital identity, well-being and safety
- communication, collaboration and participation
- teaching, learning and self-development
- technical proficiency
- information, data and media literacies
- digital creation, innovation and scholarship.

April 2018 saw the launch in the UK of the NHS Digital Academy and enrolment of the first cohort of digital health leaders, in partnership with the Institute of Global Health Innovation at Imperial College, London, the University of Edinburgh and Harvard Medical School. Although this is clearly a very positive step forward, recruitment was unfortunately targeted at chief clinical information officers, chief information officers, and senior operational, technical and clinical managers with five years informatics or digital experience. This does not, therefore, appear to be inclusive or likely to have the hoped-for major impact on the wider agenda outlined above.

It is crucial that we, as healthcare professionals, don’t get left behind and that we are purposefully, and not in a token way, involved in the research, design, implementation and testing of new digital technology through which we can develop digital capabilities within a framework of humanly sensitive

care. Through a lens of digital humanism we can develop a distinctive and simple vocabulary that keeps 'humanising' as the central focus and concern in the future development of health technologies. Perhaps only when this happens will healthcare professionals develop greater confidence and competence to take advantage of the opportunities that technology affords.

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