



OPINION ARTICLE

# Using Technology to Nurture Core Human Values in Healthcare [version 1]

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### Abstract

This article was migrated. The article was marked as recommended. The important task of nurturing core human values in healthcare can be assisted and facilitated by the use of a variety of technology, to create, store, and disseminate a range of narratives in health and illness, from text and video to immersive experiences using virtual reality. This paper will discuss the importance of narratives to nurture core human values, the use of technology for narrative to nurture core human values, as well as the challenge of using technology for narrative to nurture core human values.

### Keywords

Technology to nurture values, Narratives to nurture values, Technology for narratives, Virtual Reality to nurture values

### Open Peer Review

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1. **Jonathan Guckian**, Leeds Teaching Hospitals Trust
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Any reports and responses or comments on the article can be found at the end of the article.

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## Introduction

The International Charter for Human Values in Healthcare presents five core values that are essential for effective healthcare (Rider *et al.*, 2014): compassion, respect for persons, commitment to integrity and ethical practice, commitment to excellence and justice in healthcare. Developing and sustaining these values across the lifelong journey of becoming and being a doctor is essential, and the ubiquitous presence of technology is increasingly having a central role in nurturing these core values.

Narratives are essential to nurture values in healthcare since they promote self-reflection (Chou *et al.*, 2014), and technology is becoming increasingly important for the creation, storage, and dissemination of a wide range of different narratives, from text and video to immersive experiences using virtual reality (VR). In this article we will highlight the potential of using a variety of technology for nurturing core values through self-reflection both in the creation and consumption of different narratives.

## The importance of narrative to nurture core values

A narrative is “anything that tells or presents a story” and all narratives have several features (Jahn, 2017), including the topic and a medium to present the story, such as a podcast or video. The most important feature of a story is an intended reaction in members of the audience, such as a feeling of surprise or sadness. Dewey (1934) highlighted the importance of ‘having an experience’ that occurs when presented with a narrative, especially when this experience is an unexpected emotional reaction. When faced with this reaction, the person tries to make sense of why they have had the reaction by engaging in self-reflection. Often the reaction is because the main beliefs and core values of the person are challenged by the experience. The process of self-reflection is particularly enhanced when it is guided by another person, such as an educator or peer, and also when there is a cycle in which there is an opportunity to put new insights into action, which leads to further self-reflection (Dewey, 1933).

We are inspired and moved by narratives. Professional practice in healthcare is replete with a wide range of different experiences and narratives, including suffering, comfort, inspiration and joy. Narratives can be told from the perspective of patients, relatives, caregivers, healthcare practitioners and wider members of the healthcare team. These narratives can be in written form, be told or recounted orally, performed, observed in person or from a video.

Consumption of narratives are a powerful prompt for self-reflection. “An example of a narrative which gives insight into how a professional in the palliative care sector-practice might approach dying patients was recently published in the New York Times (Puri, 2019). Similarly, the ending scene from the 1991 movie ‘The Doctor’ illustrates how an initially insensitive, emotionally distant medical practitioner develops a very personal insight into the perspective of the healthcare system when he himself became a patient, and was motivated to introduce a patient centred experience for medical students in his medical school’s medical program. The book ‘A taste of my own medicine: When the doctor is the patient’ by Edward E Rosenbaum in 1991 narrates a similar story.” (Goh, 2019).

It is important to remember that creating narratives can also be powerful in the promotion of self-reflection (Baron and Pletsch, 2019), and similarly so can self-reflection through telling narratives to peers (Player *et al.*, 2019).

“Narratives can encourage all of us to self-reflect on our roles in the promotion of health and managing disease as healthcare practitioners, helping us to improve our empathy, communication skills, teamwork, organisational abilities and professionalism. We can become more sensitive to the point of view of a patient or caregiver. We can become better at demonstrating that we care through improved communication, with more skill and sensitivity. Giving attention to the essential human side of medicine complements the scientific and technical side of medical practice.” (Goh, 2019).

## The importance of technology for narrative to nurture core values

Technology has an increasing part in the creation, storage and dissemination of stories and narratives (Goh, 2016). “There are opportunities to scale up our educational and training efforts, to engage students and practitioners beyond the classroom and to be used before, during and after traditional classroom training. We can use open source content, and low cost-free platforms to communicate with, and engage our students, and fellow practitioners. Technology makes it easier for us to create and curate content. And share this content through websites, blogs and apps. Mobile devices with free or low cost easy to use software and apps make it relatively simple and easy to create and edit, or curate text, illustrations, audio, multimedia, and video content.” (Goh, 2019).

Widely available low cost technology like websites and blogs can be used to provide access to, and disseminate patient stories and narratives, as well as to facilitate and support guided reflection and discussion. Websites and videos can illustrate and showcase illness stories and narratives.

Virtual reality (VR) and immersive reality experiences can bring an online audience remotely into a practice setting and simulate the experience of illness for students and healthcare practitioners (Dyer *et al.*, 2018). These newer technologies increasingly simulate real life settings and are more immersive, deepening our insights into a patient’s point of view (Herrera *et al.*, 2018). Artificial Intelligence (AI), can adapt and personalise the content to provide a personalised interactive digital experience, with the potential to increase empathy and compassion (Lakhani, 2019). While AI and VR are high cost methods to use technology to build empathy, lower cost solutions including mobile apps to build empathy have also been developed (Konrath, 2017; Papoutsis and Drigas 2017). We can therefore consider a spectrum of realism to abstraction - from real life to VR, interactive theatre, video and multimedia, audio narratives and podcasts, illustrations and photos, to written narratives.

**Examples of technology with narrative to nurture core values**

**Illustrations and Art** - the traditions of art, illustrations and photography to capture scenes of illness and healthcare can broaden the exposure and experience of healthcare practitioners to situations and points of view

Visualising Illness (Biernoff and Johnstone, 2017).

<http://www.bbk.ac.uk/art-history/research/visualising-illness>

and

Psychiatry student uses art to shed light on the darkest shades of illness (McMaster, 2018).

<https://www.folio.ca/psychiatry-student-uses-art-to-shed-light-on-the-darkest-shades-of-illness/>

**Video** - is a powerful visual and auditory medium that can be used to depict health and illness, and be easily shared on multiple mobile and online platforms

Facing depression: Ep 4: An Elderly’s Perspective (Channel News Asia, 2018).

<https://www.channelnewsasia.com/news/video-on-demand/facing-depression/an-elderly-s-perspective-10036596>

**Podcasts** - take advantage of the qualities of the human voice and sounds to convey emotion and feeling, to move the listener

How Podcasts Make Me an Empathetic Physician (McFarlane, 2018).

<https://blogs.bmj.com/medical-humanities/2018/05/01/how-podcasts-make-me-an-empathetic-physician/>

and

“Your Stories” Podcasts: How Cancer Impacts Families (Wroten, 2018).

<https://www.cancer.net/blog/2018-03/your-stories-podcasts-how-cancer-impacts-families>

**Video games** - interactive video, online and mobile games can be designed as guided reflective exercises, to build empathy (Kral *et al.*, 2018)

Can A Video Game Boost Empathy in Teens? (Pedersen, 2018).

<https://psychcentral.com/news/2018/08/11/can-a-video-game-boost-empathy-in-teens/137794.html>

**The challenge of using technology for narrative to nurture core values**

“As with all use of technology to enhance and augment our educational and training efforts, these efforts should be driven first by our instructional and educational objectives and not the technology.” (Goh, 2019). The key ingredient in the use of narratives to build empathy is by highlighting a patient’s point of view (Milota *et al.*, 2019), but this needs to be combined with opportunities to have purposeful guided reflection on the core messages that the narrative can offer (Laughey *et al.*, 2019). The additional ingredient of feedback on professional behaviour and communication approaches with real and simulated patients is a particularly powerful learning opportunity (Laughey *et al.*, 2019).

There are already a vast range of different narratives that have been produced and with the potential to nurture core values. However, a current challenge is that this enormous resource is widely dispersed and cannot be easily accessed by potential users. A priority is the concerted effort to systematically document and curate these narratives through online digital repositories.

An important further consideration for all educators is the increasing awareness of “digital empathy”. Medical students and healthcare practitioners will need to develop their understanding of how digital tools and communication platforms reduce the available communication cues and signals that are traditionally present in face to face communication to convey feelings and emotions, and express empathy and compassion (Terry and Cain, 2016).

Finally, as educators, content creators and curators, we will need to develop our experience and skills in design thinking for empathy (Dam and Teo, 2018), and “empathic design” (Wang and Huang, 2010), and collaborate with professionals with these skills. The empathic design process infuses empathy and awareness of individual perspectives throughout the whole design process, from conception to implementation, and requires constant self-reflection on how the educator makes the crucial decisions about the learning needs of learner, the choice of content and technology, and the potential impact on the learner. The idea of empathic design can also be taken further in our planning and delivery of a holistic patient experience, beyond the human interactions to the practice and healthcare setting and healthcare delivery process (Freihoefer, 2018).

### Take Home Messages

A variety of technologies can be used to nurture core human values in healthcare. Technology is becoming increasingly important for the creation, storage, and dissemination of a wide range of different narratives, from text and video to immersive experiences using virtual reality. In addition to an awareness of the range of available technology, as well as spectrum of digital formats of narratives in health and illness, educators will need an awareness of and skills in digital empathy, design thinking and empathic design; and to collaborate with professionals with these skills.

### Notes On Contributors

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### Declarations

The author has declared that there are no conflicts of interest.

### Ethics Statement

This is an Opinion Piece on an educational topic and does not require Ethics Approval.

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# Open Peer Review

## Migrated Content

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### Version 1

Reviewer Report 08 December 2019

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### **P Ravi Shankar**

American International Medical University

This review has been migrated. The reviewer awarded 4 stars out of 5

This is an interesting paper. The traditional belief is that technology reduces the human element in healthcare. The authors allude to this toward the end of the paper where they briefly touch on digital empathy. I would have liked them to discuss more on this important topic which is not adequately discussed. Online resources make it easy for teachers and students to access different resources. This is especially true for institutions which do not have big libraries and access to museums and other resources. Technology can lead to democratization of access. I have been using material from the New York University Litmed database for the medical and health humanities modules which I facilitate. Technology can help provide access to visual art which is in the public domain in addition to the narratives emphasized by the authors. The article is a personal opinion but I would welcome a more detailed description of different online resources which are available to teachers and facilitators of the medical humanities.

**Competing Interests:** No conflicts of interest were disclosed.

Reviewer Report 07 December 2019

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### **Ken Masters**

Sultan Qaboos University

This review has been migrated. The reviewer awarded 3 stars out of 5

An interesting opinion piece on using technology to nurture core human values in healthcare. The gist of the argument is two-stage: (1) core human values can be understood through narratives, and (2) narratives can be recorded, stored and disseminated through technology. I particularly liked the inclusion of VR and other more sophisticated technology so that the experiencer of the narrative shifts from being a consumer of the narrative to a co-creator. Perhaps the authors could share a few more examples of these. While the paper does make the main points ((1) and (2) outlined above) clearly, I feel that it falls short of providing the real value to the reader: how to use these in medical education. Education is introduced only briefly in the last section, and then only very generally, saying, essentially, these can and should be used in education. The point is well-made, but the real value would be in answering the question "How?" This is particularly important because the title, with the opening word of "Using" gives the impression that this will be the focus of the paper. So, I would really like to a new section at the end of the paper (or otherwise significantly expanding the current final section) in which the authors explain how they would see the examples used. (E.g. the video on depression is powerful. How would I, as an educator, use this in my teaching? To which students, under which circumstances? What would specific challenges be, etc.) Two minor points:• Given that the Charter is central to the paper, it would have been useful if the authors had linked to the site (<http://charterforhealthcarevalues.org/>) in addition to the link to Rider et al. • The authors might wish to address (even briefly) the issue of fiction versus nonfiction. I say this because many readers may first associate narratives with first-hand accounts of events, but some of the examples given in the paper are fictional, and one might wonder whether the impact of a narrative is somewhat diminished if it is an entirely fictional account rather than based on real (albeit anonymised) events.(By the way, the authors and readers may be interested in seeing some patient stories shared on YouTube and elsewhere. One in particular, that unfolded over a series of videos and I have found useful in teaching, are those by Simone Giertz beginning with "I have a brain tumor" at <https://www.youtube.com/watch?v=tpa4kp4lK60>). So, while the authors have a really nice idea, and argue their points well, I would like to see a Version 2 of the paper that has been rounded off with a section on practical descriptions of usage.

**Competing Interests:** No conflicts of interest were disclosed.

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**sathyanarayanan varadarajan**

SRM Medical College, SRM University

This review has been migrated. The reviewer awarded 4 stars out of 5

In this interesting article, the authors have nicely highlighted the importance of narrative to nurture core values in healthcare and the potential of using a variety of technology for narrative for nurturing core values. They have discussed these technologies with suitable examples and also described the challenges for using technology for narrative to nurture core values. The authors also highlighted the importance of newer technologies like Virtual reality (VR), Artificial Intelligence (AI) and how they can be of immense help in nurturing the core values like empathy and compassion. The authors also provided appropriate links for examples of technology with narrative such as Illustrations & Art, Video, Podcasts and Video games. This article will be helpful to create awareness of the range of available technologies used to nurture core human values in healthcare to all healthcare practitioners and medical educators involved in teaching core human values. This article is not only interesting but also highly relevant to the need of educating young medical students on core human values through technology.

**Competing Interests:** No conflicts of interest were disclosed.

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### Jonathan Guckian

Leeds Teaching Hospitals Trust

This review has been migrated. The reviewer awarded 4 stars out of 5

Lovely reflections, grounded in scholarship. Particularly enjoyed the discussion of 'digital empathy'. Increasingly relevant in a fast-paced technological era. I would have been interested in the other side of the coin - the potential for technology to impair 'core values' through negative cultures, particularly on social media.

**Competing Interests:** No conflicts of interest were disclosed.

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