The Challenges of Digitalization in Higher Education Teaching

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Abstract:

This chapter focuses on the challenges and changes that the introduction of digital technologies into higher education teaching has brought about. To date the response to the possibilities of digital media in higher education has been mainly reactive and consisted mostly of 'managing after the fact' rather than a proactive approach with visions for the future. Many universities still seem to be in a state of 'catching up' but not always 'catching on' which in part can also be attributed to generational differences between faculty and students. I propose that the most fundamental and challenging of all the changes related to the digitalization of higher education is the way that academics relate to and interact with their students, rather than the technologies themselves. I also propose that in the future we will see the emergence of two distinct ways of teaching: Mostly online courses for lectures and seminars on the one hand and highly individualized face to face tutoring and supervision on the other hand. The most successful universities will be those that manage to integrate both modes of teaching, and who have the staff with the competencies to do both successfully.

1. Technology vs. Content?

The situation in higher education is not much different from the private or the public sector when it comes to dealing with digital technologies: There is a tendency for organisations to respond and manage 'after the fact', which means that the ways of teaching and interacting with students as well as with colleagues started to change not because there was a specific need for change but rather because suddenly all those electronic tools and platforms were available, together with increasingly better and faster wireless access (Moser, 2013). In the first instance it was emails, then electronic learning platforms started appearing, first only as repositories of teaching materials, and then as more and more sophisticated interactive platforms for coursework submission and online feedback, with chat forums for student work groups, and options to build in any type of multimedia materials. Now many universities have moved on to webinars, MOOCs, entire courses taught online, and the magic word of 'blended learning' has appeared across course outlines as the 'must-have' teaching approach in modern higher education. Academics tend to start using those tools and technologies because they are available and because other universities have started

using them, but often little thought is given to the basic questions of good university teaching: Firstly, is there a real need to improve teaching methods, and if yes, at which level of university education, for which students and most importantly, why? Secondly, what are the goals and what results are we trying to achieve? Only thirdly we should ask ourselves whether using digital tools might help us in achieving these goals, and if yes, the question is which digital tools would be the most appropriate. What tends to get lost in the process is that the most sensible and adequate answer to the third question might be 'no'. Depending on the goals we try to achieve, 'old-fashioned' face to face teaching in small groups might be the best approach, and the influence and benefit of digital support might be negligible.

I would like to propose that the real art in providing excellent higher education teaching these days lies as much in knowing when NOT to use digital media as in being proficient in using them. To do this successfully, it helps to go back to the basics and think about the content of a specific module or course and what the teaching goal is, and to for instance consider the fundamental distinction between information and knowledge, and the different processes required to share and acquire information versus acquiring and sharing knowledge (Moser, Clases & Wehner, 2000). Digital media are much more efficient than face to face interactions if the content of teaching relates mainly to information such as provision of literature, information on course requirements, exchanging data sets and so on. But if the main goal relates to knowledge transfer, for instance to learning how to critically assess and evaluate literature, to giving feedback to student course work, or to using peer teaching in student work groups, then face to face methods tend to be much more efficient. If the wrong media are chosen and for example an academic tries to give formative feedback to a student over email, this will become very costly because the medium of email simply does not provide the appropriate possibilities to share knowledge. Instead there will be many unsatisfactory email exchanges back and forth between the lecturer and the student, taking up time on both sides, and with probably a much poorer learning outcome for the student compared to a face to face meeting which gives the opportunity to provide contextualised and personalised feedback with the possibility to clarify and ask questions. Especially negative or critical feedback is much more difficult to understand and accept if presented in a de-contextualised and depersonalised way such as in an email, and less likely to lead to a positive learning experience for the student (DeShon et al, 2004; Walther et al, 2011). But, receiving negative feedback and being able to use it constructively to improve and better understand the subject matter is probably one of the single most important achievements in the learning journey of students. We can only support the development of this important competence effectively if we also use the right media, and digital media should not be the first choice here. If a physical meeting is not possible for some reason – or far too costly because of geographical distance – then a digitally supported option that allows for direct interaction, such as a Skype meeting, is preferable to only written feedback.

The above leads to three main conclusions: Firstly, universities should go back to looking at the basics of overall learning goals when aiming to enhance their digital teaching and learning provisions so as not to lose sight of the essentials in favour of keeping up with

digital trends. Secondly, academics not only need to be trained in the use of the latest digital technologies, but also in the critical evaluation of when it is appropriate to use them and when not. The last point ties in with the third point, which is simply a recommendation to stop and think before deciding to go for the latest digital technology as a higher education institution.

2. Mind the Gap: Digital Natives and the Others

There is an on-going scholarly debate on whether the so-called 'digital natives' exist as a distinct group, and if so what their characteristics are. When looking at key publication outlets such as the Academy of Management Learning and Education Journal, there are surprisingly few publications about the so-called 'digital natives', the most seminal being an article on 'Teaching the Virtual Generation' (Proserpio & Gioia, 2007) as a follow-up to 'Teaching the TV Generation' in the 1980s. Ten years ago, the authors proposed that 'the key features of this culture that are of importance to educators include connectivity, redundancy, free information (and lots of it), speed, self-pacing, snowballing (pursuing thought threads from hyperlink to hyperlink) and impersonal interactivity' (2007, p. 71). Important further aspects are that students today are used to much more visual information interspersed with text and verbal instruction than earlier generations. Namely videos are an important mode of both learning and instruction, and video games and online simulations can be used as learning techniques to engage a virtual generation in interactive learning environments. However, the mere availability of the technology does not insure that it used or that it is effective. Effective learning is an active process and as Vygotsky (1978) observed, a social activity, characterised by knowledge sharing in an interactive context. In a second stage, individuals need to internalise and personalise that knowledge which will allow the learner to form a mental model of the learned content that can then be effectively applied to problem-solving and to understanding further and more complex content. Those basic principles of learning have not changed through the generations, only the modes of intake and interaction are now often supported by digital technologies and tend to have more visual content. This has several implications for teaching the 'virtual generation', according to Proserpio and Gioia (2007, p. 74): 1) we need to ensure the active involvement of students in the learning process, 2) we need to facilitate social settings for learning, and 3) we need a problem-solving focus in our teaching.

The above are no more and no less than the principles of good teaching, and they were the same ones before the existence of a virtual generation, and before the TV generation. The challenge of the future will be to not lose sight of those overall goals in higher education, given the vast availability of digital content, gadgets and platforms. While it is important to engage the current generation of students by including more visual content in the teaching materials and by using virtual simulations, for instance for business case studies, all of these are still only means to an end. We still need to create a personalised, interactive and social space that enables knowledge sharing and learning for each student.

Another point that tends to get lost in the discussion but that I think is important for the relation between university lecturers and students is the fact that there is not 'one' virtual generation that is clearly identifiable, but that there are many generations and that they tend to overlap in their 'virtuality' and the degree of 'digitalization' in their life. Depending on their age group, digitalization will have hit people in different phases in their life: There are those who only learned to use computers after retiring, those who grew into using computers, email and smart phones when already being fully installed in their professional careers, those who picked it up as part of their university education but not as children, those who cannot remember a life without computers, tablets and mobile phones, and now those who already as babies had important first experiences of playing and interacting on mobile devices and with digital toys. This is true for both academics and students today. To identify where to put yourself on the virtuality continuum, a quite good indicator can be the types of phones you have used in your life: do you remember using rotary phones, touch tone phones, mobile phones, smart phones? The potential gap in digital technology use is thus a relational one: University lecturers represent a number of different virtual generations, and so there is no one size fits all solution and no fixed difference between a virtual and a non-virtual generation.

As before, I would argue that what matters most is media proficiency in a much more fundamental way: Do both students and lecturers know when to use digital media and platforms and when to use face-face interactions? This seems much more important, certainly mid- and longer term, than whether the current preference for communication is SnapChat or email, both of which are likely to change in fairly short term anyway, only to be replaced by yet another technology. This brings me to the last point of meta-skills.

3. The Re-Emergence of Meta-Skills or The Pendulum Always Swings Back

Paradoxically and almost counter-intuitively, the digitalization of our lives means that meta-skills have become more important than ever. One point is the importance of writing skills and verbal written expression. Although there tends to be some lamenting in popular media that the current young generation does not read books anymore or write 'properly' because all they do is 'texting' and 'chatting', this is a skewed and often wrong perception. Many people have probably never read and written as much as they do now, both in their professional and in private lives. Wireless internet access, electronic platforms and databases, social media for both professional and private networks and the many apps for texting, chatting, blogging, tweeting, and snapping mean that many of us spend probably the majority of their waking hours a day either reading or writing in some way. Of course, the writing style has changed or is changing, down to orthographical changes adapted from texting, and multimedia messages, blogging, or videoing are creeping into the texts via many apps, and there are interesting generational differences in how much people adapt to those changes or not, but it still is reading and writing all the same. At the end of the day, good communication and writing skills are likely to make the difference between successful users

of digital media and those who are less successful, and this is not least a function of education and a central skill for anyone with a higher education degree.

Beyond that, successful users of the new media (and all the new and further options, gadgets and apps yet to come in the future) will be those who understand the important differences between face-to-face and digital communication (Moser & Axtell, 2013). This means understanding the differences in the leanness and richness of the different communication media, understanding how perceptions and behaviours of people change if there is for instance greater anonymity in the interaction and less accountability due to the medium used, and understanding how some communication channels are very effective in transmitting tacit knowledge and experience and others are highly effective for exchanging data and information but not vice versa (Hinds & Durnell Crampton, 2013). Being competent at knowing how and when to switch between different channels and media is what characterizes a successful student and a successful professional in the digital age. These are meta-skills that are and always have been at the heart of higher education learning and teaching, and in that sense the role of higher education teaching aims are still the same as before the age of digitalization.

Lastly, I believe that with time we will see the pendulum swinging back, in favour of old-fashioned 'face time' (and not the kind via the iPhone) but actual co-located face time, in the office, in the classroom, and in the pub. The inundation of information that we are all exposed to currently – much of which is low quality information and needs to be sifted through carefully to find the few bits that are actually worth reading – is likely to lead to a new appreciation of individualized, high quality face to face teaching and supervision. More than ever this requires the competence to distinguish low quality information and 'cheap talk' from properly researched and well-evidenced facts and thorough knowledge. Only well educated, knowledgeable students who are able to think critically and independently will be able to do that. Or as Graham and Metaxas (2003) put it already nearly fifteen years ago: We need students who are able to distinguish advertising from fact. This is no easy feat in a time when virtually (!) everyone can publish on the internet, without an editor proof-reading and screening the content.

Based on all of the above, I propose that we are likely to see higher education teaching evolving in two ways: One way will be the development of much online teaching and learning provision, from entire online programmes to providing yesterday's lecture as a podcast on the website. All of this will be supplemented with much more visual content than it currently is, namely videos and simulations. The second way will be the provision of individual or small group high quality face to face teaching and supervision, alongside the online provision and support. What is likely to disappear more and more are the standard co-located lectures and seminars that dominated university teaching in the past. The new developments will put high demands on academics as they need to become highly media proficient lecturers, knowledgeable and competent in using all the different digital resources appropriately, and at the same time they need to be traditional academic tutors much in the

way they have been since universities came into existence: By providing high level academic debate and high quality guidance of individual students, to foster new knowledge and to promote inquisitive and critical minds.

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Karin S Moser is a Chartered Psychologist, a Senior Fellow of the Higher Education Academy, a Fellow of the Chartered Management Institute and a full member of international professional associations such as the Academy of Management, the European Association of Work and Organisational Psychology, and the European Association of Social Psychology and Society of Personality and Social Psychology. She reviews regularly for national and international science foundations and international journals and has served as board member of several international postgraduate programmes and developed and led executive courses in social science research methods, leadership, mentoring for women in science, and knowledge and information management.

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Karin S Moser has won several awards for her research, such an Outstanding Research Award by the University of Zurich for her work on 'Metaphors of the Self', and has recently received the Academia.Net award as 'Outstanding Female Scientist' for her academic achievements, an initiative by the Robert Bosch Foundation and Nature. In 2013, she was winner of the Management Article of Year competition with her paper 'Only a click away – What Makes Virtual Meetings, Emails and Outsourcing Successful'.

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