New generation of what?

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At a recent faculty meeting, debate raged over two topics: student use of laptops and video recording of lectures. On one side of the debate, lecturers tell students to shut their laptops and put them away because, in their experience, students using mobile devices are on social networking sites, emailing or playing games rather than attending to the lecture. Opposing academics actively encourage students to bring them to class so they can undertake internet searches, have online debates, access experts on lecture themes and use electronic rather than printed textbooks. These academics argued that as most high schools now have laptop or tablet programs, students would be going pedagogically backward rather than forward in coming to a university where mobile devices are banned.

On the debate about video recording, some academics were adamantly opposed to it, stating that students would stop attending classes if they felt the same content could be accessed online. Others felt that if video recordings could replace face-to-face lectures, then maybe they should, as education comprises more than just the giving and receiving of a lecture. The group that opposed video recording stated that there is more going on in face-to-face teaching than students perceive and they should not be sent the message that attendance is optional.

New Generation Learners
Debate over these issues sits in the wider context of discussion over net- and digital-generation learners. The PC has made a big difference to human experience and children who have never known life without PCs function and think in different ways to those who experienced their introduction. Some believe that this generation is wired differently and that the physical structures of their brains have been impacted. Various labels identify children who grew up after the widespread adoption of the PC, including ‘net gen’, ‘digital natives’, ‘millennials’, ‘gen next’ and ‘echo boomers’. The letters X,Y,Z are also used to differentiate between them. People in Generation X were born between 1965 and 1979. This is said to be the last generation of people who actively experienced life before the widespread adoption of the PC. While many of the new routines, modes of communication and technologies have been adopted by Generation X, technology use does not seem to come to them as naturally as it does to later generations and is a conscious decision rather than a natural eventuality. People in Generation Y were born between 1980 and 1997; Generation Z was born between 1998 and this year. As of 1997, we started to see Generation Y enter university.

The distinctions between the everyday functioning of pre-PC and PC generations, particularly since the introduction of mobile devices, are readily apparent. How people function today is very different from how everyday life was carried out previously. People seldom leave home without a mobile phone. Most mobile phones are smartphones and can be used to search the internet. Phones are used for texting much more than for voice-to-voice contact. Some people are giving up landlines entirely. Most people have laptops or tablets or both. More and more devices have touch screens. Mobile devices are used for text document production. Laptops no longer come without wi-fi (wireless
Internet) and tablets come with optional 3G for when no Wi-Fi networks are available. Internet connection is necessary to enable social networking. Fewer and fewer bound books are checked out of libraries. More and more books and journal articles are available in electronic format for download. Many journals have stopped producing print versions. There is more open sourcing. New information is pushed to people when available, to be accepted or discarded. Multimedia is readily available. People listen to music and watch videos using digital devices. Games have impressive graphics, are interactive, allow creation and design and enable simultaneous networked play.

Children and young adults growing up with these capabilities have different functionality expectations, including in the school and university contexts. They expect to be able to design, create, construct and post publicly. They expect immediate and specific feedback and responses. They are used to being able to manipulate and to work hands-on with actions and reactions. They are seldom disconnected or isolated. When on their computers, chat is usually open. As soon as they get out of class, they start texting. Sitting silently in class is an alien experience. Discussing, comparing and applying experience comes naturally. Reading is usually online, which means that it is multi-directional, linked and associated by meaning and not by pages. If an unknown word or a new concept is introduced, Wikipedia provides a quick and user-friendly answer. An electronic book is considered useless if it cannot be searched, digitally highlighted and bookmarked, hyperlinked and connected to the internet.

Many educational theorists believe that people growing up in this era of networked mobile devices think differently. They believe that the capacity of new technologies to allow enhanced functioning should be celebrated rather than feared. The challenge posed to educators at schools and universities is to design curriculums and pedagogy such that they support rather than stifle intellectual capacity and knowledge generation.

**Dissenting Perspectives**

There are numerous opposing and challenging voices in this debate. One critique is that PCs and mobile devices are a solution to a problem that did not exist. In other words, technology is being introduced into classrooms because it is there, or because of a ‘gee whiz’ factor rather than as part of a rigorous, responsive pedagogy. Some authors write about technological determinism, which metaphorically means that the cart is leading the horse rather than the other way around. Some educators argue that the use of technology
in schools and university is accelerated by consumerism and not driven by promising educative practices for learning. Others argue against the stereotyping and homogenisation of applying the broad and sweeping labels of generations. Some feel that ‘net-gen’ learners are privileged over others, when there is no evidence for a substantive difference between them. Critics argue that we have gotten distracted by language of generations when we need to focus on whether there is any evidence that the use of technology in schools and universities advances learning. Some say that there is no proof that those who grew up surrounded by computers think differently.

Still others argue against ‘net-gen’ thinking, saying that educators should not be held ransom to the whims of students. Just because students are asking for technology use in school and university, it does not mean that they will use it wisely or that it will add value to education. Many teachers and lecturers see digital devices as time wasters. They argue that children are spending too much time in front of screens. They are missing out on fresh air, exercise, sport, face-to-face socialisation, reading whole books from cover to cover and writing using pen and paper. They worry that schools and universities are spending money on hardware, software, technology maintenance and training when they could be spending it on reducing class sizes, purchasing lab equipment and taking field trips.

Technology And Pedagogy
Part of the reason why there is little empirical evidence that the use of technology in school and university has a positive impact on learning is that technology is not a magic bullet. Simply putting it in place will not work. The academics in the faculty meeting described in the introduction to this article could prove their points that laptops distract students from learning and that recorded lectures stop students from attending classes. Their points could be proven because they have not changed their teaching. Infused technologies only work when part of a well-informed pedagogy and curriculum. Technology works when considered in the context of learning outcomes and pedagogical process. For example, one of the learning outcomes of a biology class is student modelling the process of photosynthesis; computer animation is appropriate for this task. One sociology learning outcome is to compare and contrast cultural views on the role of the child in the family; in this case the internet is a vital source of information and online discussion forums help students articulate their diverse experiences and challenge one another’s thinking. In short, technology and pedagogy go hand-in-hand.

Accepting Reality
Perhaps the debate over whether the ‘net-gen’ learner concept is valid or valuable will not be resolved. Perhaps it should not be, in that the tensions direct attention to complexities that must be considered carefully. The debate is reminiscent of that on distance education and inclusive education. Whether people argue for or against these, the fact remains that some students do not attend physically the universities in which they are enrolled. The reality is that many children with disabling conditions attend regular neighbourhood rather than special schools. Technology is here. ‘Here’ means in the home, in school and in university. There will always be lecturers who argue that they do not want laptops brought into their classrooms, but mobile devices will be harder and harder to exclude. Academics will argue that they do not want their lectures captured and posted online, but university executives will insist it be so in order that their universities are not left behind. When educators accept technology as part of the teaching, the challenge will be to teach well with that technology, unleashing the potential to inspire and engage learners and learning.

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