Technology in education

By Alan Goldberg

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I have to make my position very clear. I am a firm believer that the use of technology has a crucial role to play in the preparation of today's learners for their life beyond the confines of academia. I am also of the opinion that technology in and of itself does nothing. Technology is a tool. And like any tool, it can be used successfully or abused.

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In 1996, the late Steve Jobs was being interviewed for Wired magazine and was questioned on his views on the potential for technology to transform education. His reply was a sobering one, particularly for the man who had invested his life in creating technology that was easy for the average person to use, and much time and money in installing computers in schools; who believed that the computer was "a bicycle for the mind."

I used to think that technology could help education. I've probably spearheaded giving away more computer equipment to schools than anybody else on the planet. But I've had to come to the inevitable conclusion that the problem is not one that technology can hope to solve. What's wrong with education cannot be fixed with technology. No amount of technology will make a dent.

Technology does not exist in a vacuum – and more often than not, society and the acceptance or understanding of how technology impacts and fits into our lives often lags behind its implementation.

Technology impacting education

There are at least two ways that technology can impact education. The first is the more obvious one. The distribution of content digitally, the ability to connect learners both to their peers, their teachers, the wealth of content out there and to experts in the field, all through the medium of the Internet, is one avenue that can help us to remove some of the inequalities that bedevil our education system. The ability to replace paper with digital content has huge cost saving implications in both creation and distribution.

This use of technology for distribution and connectivity is one that everyone understands and comes from our experience and understanding of how the internet has changed the world. It's a classic case of looking at technology and finding a use for it.

The second, and to my mind more interesting opportunity, is the use of technology as a personal tool in the hands of the learner to challenge, motivate and engage. To allow for the fact that not all learners learn at the same pace. To appreciate differentiation and to leverage the strengths of our differences, rather than confining our learners to the narrow box that is the 'I teach content, you consume that content, then write a test to demonstrate your understanding of that content' paradigm that is, in the main, the hallmark of our current education system.

This challenge is more subtle and plays more to the fact that technology is ubiquitous. There are now over 20 million people connecting to the Internet in South Africa today, and the large majority are connecting via mobile devices. If we truly want to achieve successful outcomes with the use of technology in the classroom, we need to understand what outcomes we want, and then work our way back from that.

The perspective of today's learner

Students who are graduating from University today, were born in the year that Google was founded. They do not know a world without a search engine. Their challenge is no longer that of access to information – their challenge is they are faced with a daily tsunami of information that they have to analyse, assess and evaluate. Learners going into high school were two years old when Facebook was founded. They do not know a world without social media. They do not send emails to each other – this is the domain of their parents and business. They publish. They use Tumblr, Instagram, Snapchat. A lot of them don't use Facebook, because really, who wants to friend their parents? At best they use WhatsApp to have one-to-one communication with their peers. Children who are entering primary school were born the same year the iPad was introduced. They do not know a world without a multi-touch computing device.

They have also grown up in a world where media is omnipresent. It's in the aisles and checkout queues of the supermarket, with recipes and specials rolling across the TV's hanging above the checkout counters. They are creators of content as much as consumers of content and they are as comfortable in generating video and audio content as they are sitting down and writing a school report.

Digital technology is commonplace and the hardware, married with connectivity has changed our lives forever which, barring an apocalyptic event, is not likely to revert back to pre-digital days. And yet, in the main, we still teach the same way we have for the last 200 years. Change is hard. The blackboard, when it was introduced took nearly 30 years to be accepted as a tool for instruction. The school bell was introduced by the Victorians to accustom the students to the concept of shift work. And let's not even mention what Socrates thought about the uselessness of books in learning.

Fortunately, there are models to follow. The **Maine Learning Technology Initiative 1** which was the first large-scale deployment of mobile technology in the classroom has given us **Ruben Puentedura's SAMR model 2** (Substitution, Augmentation, Modification and Redefinition) as a framework for analysing the effectiveness of the use of technology in the classroom. **Mishra and Koehler's TPACK 3** (Technology, Pedagogy and Content Knowledge) gives us an understanding of what is required by teachers for the integration of technology into their teaching.

Extending beyond old learning systems

So what does this look like? In an age where the challenge is no longer access to information, we need to give learners the

ability to express themselves in ways that extend beyond the written report, encouraging collaboration, creativity and communication. What it should not look like is the use of technology for its own sake, or to rote teach learners how to use Microsoft Office, because that's the tool they'll be using when they leave school (never mind the fact that office will be unrecognisable in its current form by the time they leave school). With the ease of use of devices like iPad, the focus is no longer on learning how to use the device - those days are over.

The focus is now on the effective use of the device. We need to create challenges for the learners and have them deliver their understanding of their learning in a manner which is far more reflective of the tools and requirements of business and life beyond school. In this world, the teacher becomes the erudite adult, skilled at teaching, who assists learners in scaffolding their learning in ways that are unique, meaningful and personal to them.

At one of our education events, our keynote speaker, Abdul Chohan, director of education at ESSA Academy in Bolton, England, one of the UK's first (and incredibly successful) one to one iPad implementations, was harangued by one of the delegates when he indicated that he had no problem with learners taking photographs of the whiteboard at the end of the lesson, rather than transcribing diligently what he was writing as he wrote it. Abdul's response? "If they have their heads down writing, they are not listening to me. They are not engaged in the learning process. You may be creating a class full of secretaries. I'm creating a class of CEOs."

Integrating technology

At Digicape, as Apple specialists in education, we have been involved with over 80 schools in assisting them with the integration of technology into the classroom, initially with Mac, and latterly with iPad. We have seen spectacular successes, most notably Parklands College whose one to one implementation has been recognized as a lighthouse in education, not just in South Africa, but as a model for schools worldwide. Sun Valley Primary School is another such beacon. But we have also seen poor implementations that have left both the school and the learners underserved.

What has separated the success from the failures? The main differentiator is leadership and vision. Understanding what you expect to achieve with the technology and then empowering your teachers and learners to fulfil that potential. Following on from that, the professional development of the teachers is crucial. Teachers are in the main unused to change. And changing what may appear to be a successful, working system is a challenge. Giving them the understanding of what is possible rather than expecting them to be technical gurus is the first step in empowering both them and the learners.

At a time in our country's history where it is believed that the only way we will achieve success in the classroom is to create a framework which stipulates what each teacher will be teaching at what time of day, guaranteeing that the curriculum will be fully covered, I have to ask a final question:

At what point does getting through the curriculum guarantee that learning is actually taking place?

ABOUT THE AUTHOR

Alan Goldberg is the director of education at Digicape (Apple Premium Reseller). Goldberg's mission is to ultimately assist institutions in offering learners a richer, personalised learning experience through the use of Apple technology.