

## Is paper past it?

The age of online connectivity is here and schools are already moving towards digital environments. But is the paperless class inevitable? Fairlie Atkinson investigates.

The number of computing devices that connect to the internet and can be used to facilitate learning are on the rise. According to last year's survey by the 2020 Communications Trust, schools report having a digital device for every three students; 86 per cent of schools have tablets. Clearly, we're in an age of connectivity – but does it spell the end for paper?

### What is a paperless classroom?

A 'paperless classroom' is a term used to describe a digital environment, where work is distributed and retrieved electronically. A Learning Management System (LMS) is often used by paperless classrooms to manage the distribution of learning materials. Students use their Wi-Fi-connected devices to complete their activities in the classroom.

Schools are moving towards paperless environments for a variety of reasons. In 2012, it was reported that Tamaki College, a low decile school in Auckland, had gone paperless. Its teachers commented the inclusion of devices reduced the inequity between schools. At the other end of the decile spectrum, a PE teacher at St Andrew's College in Christchurch commented that the paperless classroom facilitates the close monitoring of assignment completion, and gives educators a chance to flick students an individualised reminder or offer of assistance.

### Efficient and effective

It's fair to say that the days of standing at a photocopier waiting for it to laboriously produce 30 copies of a subject unit workbook are no longer necessary. Nor do we have to worry about the student who missed the last class and didn't pick up the handout. Provided it's made accessible, a digital environment means that the handout is available at any time of day or night for the student to view on their device of choice.

Paperless textbooks also mean not having to worry about the new editions and what to do with the old ones. And if this content is homegrown, then it can be updated in just a few clicks. The chances of getting all distributed hardcopy textbooks back at the end of the academic year are never high, but if they're digital that stressful end of year activity is also an unnecessary one.

### Changes in pedagogy

Paperless classrooms also mean a change in teacher pedagogy and learning environment. Since its introduction, the SAMR (Substitution Augmentation Modification Redefinition) model has been widely adopted. It facilitates teacher analysis of their learning activities that they have developed for a digital environment. It asks teachers to consider whether the activity they have planned is simply a substitute for the paper-based activity or whether it actually augments or modifies the activity.

Flipped learning introduces the idea of using self-paced individualised learning. Much in the style that Khan Academy has developed short explanatory videos, teachers who use flipped learning with success use short videos to explain key content or concepts before they enter the classroom. Students watch these in their own time, as many times as they need to. The classroom is then used for building on the student learning.

### Pitfalls of paper-free

Not every transition to paper-free classrooms is successful. In the United Arab Emirates, students learning English as a Second Language were given iPads and teams across the three federal universities were tasked with developing digital textbooks. Very quickly it was discovered that the institutions needed to avoid technology-driven pedagogies in order to teach successfully with the device. As someone who was part of this initiative, the biggest challenge was professional development for teachers and an infrastructure that supported the devices.

### Personalised learning

Going digital increases the chances of students being able to personalise their learning. Those that are unable to engage successfully in a classroom will often find virtual support in the form of search engines, dictionaries, and instructional videos. And we all know that some people are simply not morning people. A student that cannot cope with intense engagement in the morning will be more than happy to chip away on an activity late at night.

And what about relevance? How many times do we hear: "how will I use this when I finish school?" The digital classroom environment is closer to what a student will encounter in a tertiary or work environment. Walk into the Robertson Library at the University of Otago, for example, and the ground floor is devoid of books! Instead, it's populated with banks of computers and study desks. The books are hidden away upstairs. And, says the library, if there's a digital edition of a book, it'll buy that rather than the hardcopy.

Most work environments store their data online, process their accounts online, and communicate with their customers online. This is the growing reality of our society.

### Working towards paper free

Ultimately, community, faculty, and student buy-in is essential for a shift to a digital environment. And for some subjects that are still textbook dependent, the shift may be only partial, not least because copyright is an essential element to be considered.

The easiest way to begin the shift towards paperless classrooms is utilising tools like Google Apps for Education (GAFE) or Microsoft's 365. There's storage of classroom materials, sharing and collaboration on written work, presentations, and data manipulation. They run across devices, and students and teachers can embed, attach, comment, and download many file formats.

Teachers can engage with students on a personal basis and monitor individual progress more readily than in a traditional classroom environment. A digital personalised comment to a student that may not engage very readily in the classroom can provide a connection with the teacher that might not have otherwise been made. A document that has been shared with the teacher can be monitored for progress, editing, plagiarism, and all of this in real time. Feedback can be given at any time.

While not everyone is excited by the prospect of a transition to a paperless environment, most know that it's coming. Whatever ends up happening, however, the focus must remain on the students. As long as the device is never put before the pedagogy and that curriculum is developed for students and not for devices, then the transition to paperless classrooms will continue. >

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