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AV IN EDUCATION: A VISION FOR THE FUTURE

In the past 15 years, technology in the Australian classroom has progressed from chalk and blackboard to interactive touch screens and tablets. Where once a TV and VHS player were wheeled in to the classroom to show an episode of Life on Earth, students of all ages are now interacting with content, and sharing thoughts with their teachers and each other.

The global digitisation movement is allowing the flow of data across networks that that were once expensive and cumbersome. We can "broadcast" from our laptops to the world for the cost of an internet connection. But is AV technology in the classroom doing what it's supposed to? Is it educating or simply entertaining? And have we actually taken steps backwards since the 1990s in terms of sound and vision quality?

John Ungerer is Managing Director at Kramer Electronics Australia and New Zealand. Kramer Electronics is a manufacturer of audio, video and computer signal processing solutions.

"A large focus of the equipment we produce is taken up by the education sector, it's the dominant vertical," Ungerer says. "We're providing infrastructure that makes teaching spaces more useful, because the days of a lecturer standing in front of a blackboard are long gone."

Essentially a hardware company, Kramer has responded to the changing digital environment by entering into software solutions as well; specifically, wireless collaboration and management platforms for classrooms and venues.

TO 4K OR NOT TO 4K – THAT IS THE QUESTION

Like many AV professionals, Ungerer wrestles with the AV arms race between hardware and content: do we need 8K screens if we only have full HD content?

"A lot of our research and development goes into ensuring that technology is relevant and that it actually assist the learning process, rather than existing for its own sake," he says.

"You typically find that hardware is being developed more quickly than the content produced for it. We have products that allow people to view lower resolution content on a 4K screen, while making it look as good as possible. Because if you take a 1080p full HD signal and send it to a 4K display you are effectively forcing the 4K display to scale down that content. An off-board scaler will do a better job, but it still won't give you 4K. I would say 80% of what's viewed on a 4K display is actually full HD."

In fact, Ungerer says that in terms of AV quality we have gone backwards because of mismatching hardware with content, but also because compressed formats like MP3 and m4a are delivering worse audio than vinyl and CD.

> "Technology assist the learning process, rather than existing for its own sake

PRIMARY, SECONDARY AND TERTIARY AV ENVIRONMENTS

Kramer supplies AV equipment to all three education verticals, primary, secondary and tertiary. According to Ungerer, in primary schools there is a drive to interactive LCD panels – multi-touch enabled and with wireless collaboration. The panels are small because the children need to interact with them. Sharing isn't so important in primary schools, but wireless connection is so that children can move around with their tablets.

Secondary students have similar needs, except there are also projectors, with the teacher's laptop connected to a display device. Security also becomes an issue, as tech-savvy students interact with school networks.

The added requirement at tertiary level is student access to recorded lectures. Although lectures can be streamed live, students also want to be able to review them. "There can be some direct connectivity in the lecture theatre, and sharing between students," Ungerer says. "And in a lot of bigger spaces there are multiple displays, and video conferencing equipment to bring in guest speakers."

> **"There can be some direct connectivity in the lecture theatre, and sharing between students**

TOUCH SCREEN VS PUSH BUTTON

Ungerer says the topic of how much AV us useful in the classroom is "probably the question on everyone's mind at the moment". Kramer Electronics makes high-end technology that's aimed at wireless collaboration, supporting the BYOD trend in education, and supporting iPads, smartphones and tablets.

But bringing AV into the classroom can be more than ensuring every student has a tablet. An advanced example of transformational learning is Prendi's 'Wonder Room' project for All Saints Anglican School on the Gold Coast. Prendi is a full-service digital solutions provider, and managing director James Ingram says All Saints wanted to differentiate itself as a technology innovator.

The Wonder Room contains multiple technologies, but the centrepiece is the seamless 1×5 Multitaction touchscreen wall. Multitaction screens have built-in infrared cameras, allow for unlimited points of touch, recognition of QR code markers directly through the screen, and seamless touch capability across any number of connected screens.

A topic is explored in a non-linear way as students interact with free-floating circles on the screen that relate to that particular topic. Each circle contains other circles, which combine to form a concept map. "The information has no categories, no titles," says Ingram. "It's a bunch of circles you go through and you enter a rabbit hole of information.

"In the Wonder Room you don't know where you're going on the journey. It's a roundabout way to teach, because you can learn something that you wouldn't usually look for."

EASE OF USE AND PURPOSE IS KEY

The Wonder Room's appeal is its ease of access for students used to touchscreens on phones and tablets.

Ungerer believes that unless a system is installed in a way that gives the user an easy experience, it will fail to engage them. With so much tech in our lives, people are not keen to learn new systems. They expect every new system to be as easy to use as a smartphone or iPad.

"Kramer Electronics has an AV system that activates when a laptop is plugged into it. That takes the thinking out of setting it up. Teachers who want to deliver their knowledge can, even if they couldn't care less about technology."

THE FUTURE OF AV IN EDUCATION

Ultimately, the future of AV in education must rest with the educators. The best display in the world will fail in the classroom if its content does not meet curriculum goals.

While the Wonder Room is a stunning example of technology teaching children to think outside the square, not all schools have the capacity to develop similar concepts.

As Ungerer says, Kramer Electronics' mission is to provide "infrastructure that makes teaching spaces more useful". AV concepts in the classroom must serve the goals of the teacher and the needs of students – relevancy, not innovation for its own sake, is the key to the future.

> **"Karmer Electronics' infrasctucture makes teaching spaces more useful.**

Is AV technology in education doing what it's supposed to? In this post we look at the use of AV in primary, secondary and tertiary education. ■


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DEFINED
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