

TECH TALK FOR PRINCIPALS

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So you have done some coding..... where to next?

The term 'coding' has become a bit of a 'catch-all' phrase encompassing elements of tech that most people don't understand well. Some of the schools that we speak to believe that coding is either not important enough, or that they have already done it with their students. We want to send the message loud and clear that any strong digital technologies program in your school should encompass a number of different subjects in this space, coding is just the start.

If we want to really prepare our students for the future, revolutionising education in Australia to ensure we meet the needs for the future of our country then we need to think a little harder about this.

There's no doubt that our future involves technology, on every level. But what does that mean and what should you be teaching to prepare the workforce of the future? Coding? Microsoft Office? How to use an email? Robotics? How to access an educational app on a tablet device? We have heard all of these responses when we talk to teachers about the digital technologies strategy in their schools.



FIVE steps to a strong digital technologies program for your school

1. Coding is the foundation for a digital technologies education

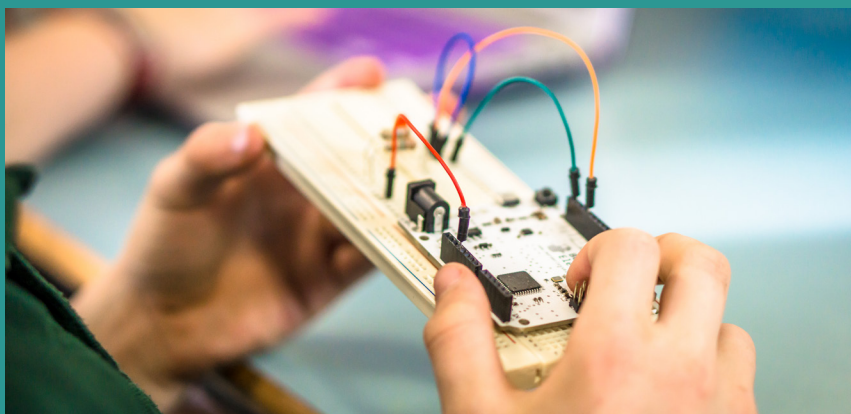
Any good digital technologies program is underpinned by a solid foundation in coding. There are core coding concepts that provide the foundation for learning, including: loops, conditionals, variables, plus a multitude of other elements. Students need to understand what these concepts do, why, when and how to use them. They need to learn how to think in a new way (computational thinking – logical thought processes). They need skills in collaboration and project management. No technology is developed and managed by one person – Facebook and Google are run by literally thousands of people and they are technically one computer program.



2. Applying coding learning to other tech subjects: 3D printing, Robotics, Electronics

Once your students have mastered basic coding skills, practiced and applied them, a good digital technologies learning pathway will apply that coding to other applications. Electronics and robotics are a terrific example of this. Many schools are doing a great job of implementing some robotics or organising one-day incursions to expose students to this subject. But robotics and electronics don't happen in isolation. What drives the robots or circuits they have had a play with? How can you truly consider the scope of problems robots could solve if you don't understand the coding that drives the robots and therefore what they can do? They go hand in hand and strong, in-depth learning in robotics and electronics simply has to include the coding and the programming and language used to drive it.

While a small number of schools are blessed to have a 3D printer on their campus, almost 100% of the schools we have spoken to do not know how to use them and they are usually sitting dormant in a store room. 3D printing is one of the biggest emerging technologies of the future. Despite a lack of educator knowledge on 3D printing technology, it will be a skill that students need to learn. We have our own 3D printers which we bring and use in our school lessons.



3. Design using technology

Let's not also forget that design and the arts are an enormous element of digital technologies. A significant amount of the digital technologies developed now and into the future will be public-facing. This means it should be visually appealing, user friendly and marketable. These features are developed in the design process. A solid digital technologies program should include elements of this. Design is a skill in itself and as technology develops, there are platforms that can deliver websites and apps that are commercially viable – all you need to do is..... you guessed it..... design them.

4. Integration

Digital technologies isn't a stand-alone subject so how do we continue to teach the subjects we have now and squeeze in something else – no matter how important it is? Integration. There is real opportunity to properly and appropriately integrate digital technologies into other subjects. Present that assignment on parliaments in a website format perhaps? Develop a game or an app about plants and animals? The possibilities are endless.

5. Get External Help

We know that digital technologies can be a daunting subject area and sometimes for schools the hardest bit is simply knowing where to start. Educators have not been provided with adequate tools and information to develop meaningful programs. We know many schools contract outside help to implement sports programs like gymnastics and dance. This has been going on for years. We are in the age of the digital revolution and we either make a decision as a country that we fix the digital literacy crisis now or we will regret it later.

