Williamstown Primary School's Digital Learning Vision & Pedagogy

Our Digital Learning Vision

To prepare students for an ever-changing world, where technology is present, accessible and embedded. To develop students' abilities to communicate, collaborate, analyse and create, by using digital technologies as a tool to prepare them for success in a digital world.

Just as the technology we use is always evolving so is the way we use it to educate our students.

Williamstown Primary School continues to provide a rich, balanced curriculum, with entrenched values and beliefs. We have many valued traditions and enjoy community involvement across the school.
In recent years we have also demonstrated our commitment to successful, evidenced-based, 21st century learning strategies enhanced by the successful introduction of our iPad program.

This program has been implemented across the whole school, with a 1:3 school based model in Years P-2 and a 1:1 BYOD (Bring Your Own Device) model in Years 3-6.

Our Willy Kids have been building their learning capacity, within a learning environment that enhances the challenging, relevant and high quality learning programs we implement across the school. As with everything we do at Willy, we have ensured we have adopted an approach that we believe is the most successful for our learning community, fits within our *Values, Beliefs and Teaching Practices* and provides the best environment to maximize learning for our students.
http://williamstownps.vic.edu.au/vision-values-beliefs/

We believe iPads are the mobile devices that best supports the educational goals we have for our students, while providing a more personalized approach to your child's learning in all areas of the curriculum.

We want all Willy Kids to:

- Be successful learners and readily able to purposefully navigate the digital world
- Have greater access to more personalized learning opportunities
- Be confident in their capacity to safely operate within this digital environment

Our Digital Journey

- **2010** – Williamstown Primary School operates a traditional ICT model from a 30 desktop (iMacs) computer lab.
- **2011** – School introduces 30 Macbook laptops into Years 5/6. This implementation was hugely successful as student's ICT skills, engagement and work output increased.
- **2012** – Williamstown Primary School begin investigation into 1:1 device program.
  (Investigation involved multiple school visits, support meetings from DET Support Services and ICT consultants)
- **2013** – School's ICT strategy and vision presented to School Council and endorsed.
- **2014** – School undertakes network readiness upgrades and implements Teacher Education Program.
  Term 3 Optional iPad trial commences in Years 5/6
- **2015** – Full BYOD Program commences in Grades 5/6-
  (Approx 90% of students have their own device.)

- **2016** – BYOD iPad program commences in years 3/6
  (Over 90% of students across 3-6 have their own device.)
- **2017** – Williamstown Primary School is invited to participate into the distinguished "Towards Transformation" program.
- **2018** – Implementation of the DET and Google for Education program.
  (Staff and students have full access to the Google apps software through DET secure services).
  - Coding/Robotics implemented into classroom curriculum supported by lunchtime Clubs.
- **2019** – Two Grants (Mobil and Toyota Community Trust) enable school to purchase 3D printers to increase STEM awareness and resources
  (96% students across 3-6 have their own device)

Digital Technology

The difference between ICT and the Digital Technologies Curriculum

Digital Technologies focuses on developing students' thought processes in order to unravel problems, and then design and generate digital solutions to them. ICT on the other hand is a general capability in the Australian Curriculum is about equipping students with technical skills and understandings of safe and secure digital practices to access, exchange and manipulate information that supports their learning in a range of endeavours. Digital Technologies is underpinned by key principles of computer science. The curriculum involves students learning how to create digital solutions through the use of information systems and specific ways of thinking about problem solving. Mainly through the application of the logical reasoning (computational thinking) students learn how to tackle problems by breaking them down into appropriate chunks and then creating a set of steps and decisions (algorithmics) that can be carried out using a digital device to create a solution. Its emphasis is more on developing students' ability to think computationally, rather than on the use of a range of digital devices to produce information.

ICT as a general capability primarily involves students using digital technologies to effectively communicate, collaborate and create resources. The development and application of these capabilities is almost impossible to achieve without the use of digital technologies. This contrasts starkly with the Digital Technologies curriculum where much learning occurs unplugged, however, students will still apply their ICT capabilities to help their learning in Digital Technologies.

http://www.digipubs.vic.edu.au/curriculum/digitaltechnologies/digital-technologies-curriculum_why

The digital technologies curriculum enables students to become confident and creative developers of digital solutions through the application of information systems and specific ways of thinking about problem solving.

Students acquire a deep knowledge and understanding of digital systems, data and information and the processes associated with creating digital solutions so they can take up an active role in meeting current and future needs

https://www.education.vic.gov.au/school/teachers/teachingresources/discipline/technologies/Pages/digitaltechnologies.aspx

Creating Digital Citizens

Digital citizenship is about confident and positive engagement with digital technology.

A digital citizen is a person with the skills and knowledge to effectively use digital technologies to participate in society, communicate with others and create and consume digital content.

Three core principles that responsible digital citizens should practise are:

- **ENGAGE** positively

https://www.esafety.gov.au/education-resources/classroom-resources/digital-citizenship/engage

- **KNOW** your online world

https://www.esafety.gov.au/education-resources/classroom-resources/digital-citizenship/know

- **CHOOSE** consciously
- https://www.esafety.gov.au/education-resources/classroom-resources/digital-citizenship/choose

We believe that the implementation model of school based iPads from P-2 and BYOD model from 3-6 gives us the greatest ability to support our students in becoming the best digital citizens they can be, giving them all the tools required to succeed.

Digital Technology use within core curriculum areas

https://www.education.vic.gov.au/Documents/school/teachers/teachingresources/discipline/english/literacy/LiteracyandNumeracyTipstoHelpYourChild_Final.pdf

Digital writing and creating

We now live in a world full of digital technology. To give your child the best chance of success in literacy, it is important that your child becomes comfortable with technology and can use various technologies to share their ideas and show their creativity.

Weblink to the Victorian Curriculum Digital Technologies

http://victoriancurriculum.vcaa.vic.edu.au/technologies/digital-technologies/introduction/rationale-and-aims

Learning in Digital Technologies and Cross curriculum integration

http://victoriancurriculum.vcaa.vic.edu.au/technologies/digital-technologies/introduction/learning-in-digital-technologies

English:

ICT capability is an important component of the English curriculum. Students use ICT when they interpret and ***create print***, ***visual and multimodal texts***. They use ***communication technologies*** when they conduct research online, and collaborate and communicate with others electronically. In particular, they employ ICT to access, ***analyse, modify*** and create ***multimodal texts***, including through ***digital publishing.***

Mathematics:

Students develop ICT capability when they ***investigate, create and communicate mathematical ideas*** and concepts using fast, automated, interactive and multimodal technologies. They employ their ICT capability to ***perform calculations***, ***draw graphs***, ***collect, manage, analyse*** and ***interpret data***; ***share*** and ***exchange information and ideas*** and ***investigate*** and ***model concepts and relationships***. Maths software can engage students and promote understanding of key concepts.

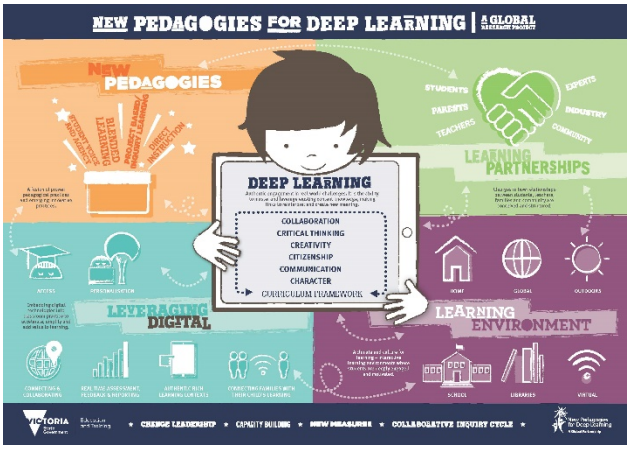
Science:

Students develop ICT capability when they ***research science concepts*** and ***applications***, ***investigate scientific phenomena***, and ***communicate their scientific understandings***. In particular, they employ their ICT capability to ***access information; collect, analyse and represent data; model and interpret concepts and relationships***; and ***communicate science ideas, processes and information.***

Digital technology can be used to ***represent scientific phenomena*** in ways that improve students' understanding of concepts, ideas and information. Digital aids such as ***animations and simulations*** provide opportunities to view phenomena and ***test predictions*** that cannot be investigated through practical experiments in the classroom and may enhance students' understanding and engagement with science.

History:
Students develop ICT capability when they ***locate, process, analyse and communicate historical information.*** They use their ICT capability to access a range of ***digital sources of information***; ***critically analyse evidence and historical trends***; ***communicate and present their learning***; and ***collaborate, discuss and debate to co-construct their knowledge.***

The New Pedagogies for Deep Learning
The Deep Learning Competencies, better known as the 6C's, are the skill sets each and every student needs to achieve and excel in, in order to flourish in today's complex world. All 6 competencies have strong curriculum connection with digital technologies as outlined on DET's DIGPUB online resource and the info graphs provided below.
http://www.digipubs.vic.edu.au/21st-century



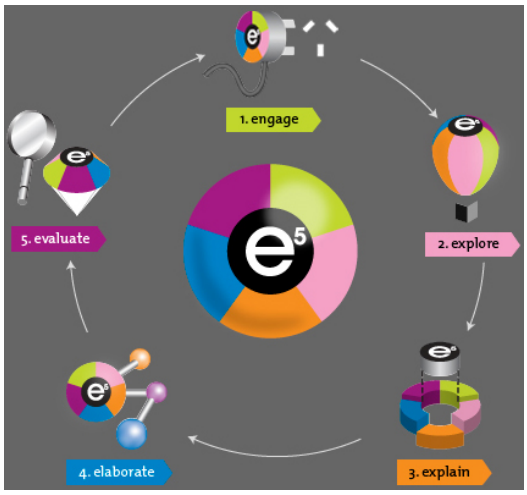
Our Digital Learning Pedagogy

Our method and practice of digital technology implementation at Williamstown Primary School has three distinct layers. These layers see the students learning process at the core of what we do. We know this as the e5 model. This is then support by the technology experience. The SAMR model increases both student and teacher awareness of the purpose and use of technology within core curriculum areas. The final layer which is teacher focus looks at ensuring teacher content, technical and pedagogical know are connected at a high level to enhance the learning experience and understanding.

Below are details of the three layers and where they sit in relation to each other.

Instructional Model (e5)

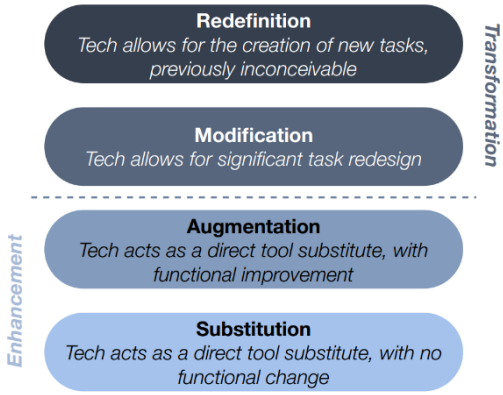
The e5 Instructional Model is not a recipe for teacher practice but rather a framework to inform conversations and guide the observation, critique and reflection of classroom practice. There are many different ways that teachers can vary in their approach and their behaviour and still be highly effective in the classroom. All teachers use their professional judgement to adapt their practice to the specific context they work in and to the particular cohort of students they teach. However, within this zone of discretion there are common practices that draw on a professional knowledge base in the classroom and we can develop a great understanding of the nature of the professional learning teachers require to improve their practice.



Research agreement about what constitutes high quality instruction in the classroom to engage students in intellectually demanding work is central to the professional conversations that occur in educational settings. The e5 domain of engage, explore, explain, elaborate and evaluate can be used as a common lens for understanding and improving teaching in all educational settings. This approach can facilitate a more planned and structured collaboration through a commonly understood language and framework.

Reflection of learning experience (SAMR)

The **S**ubstitution **A**ugmentation **M**odification **R**edefinition Model offers a method of seeing how computer technology might impact teaching and learning. It also shows a progression that adopters of educational technology often follow as they progress through teaching and learning with technology.

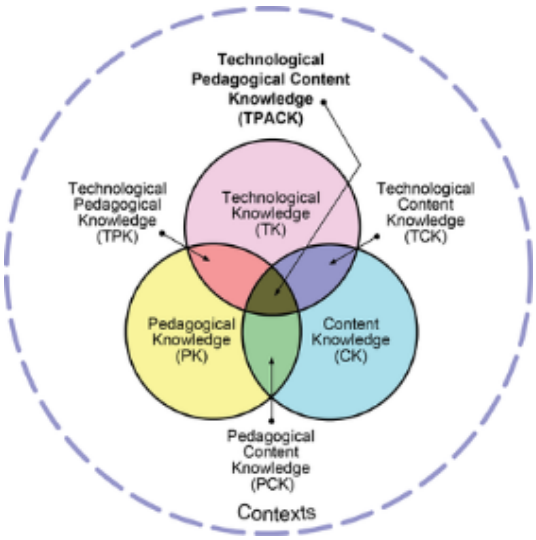


While one might argue over whether an activity can be defined as one level or another, the important concept to grasp here is the level of student engagement. One might well measure progression along these levels by looking at who is asking the important questions. As one moves along the continuum, computer technology becomes more important in the classroom but at the same time becomes more invisibly woven into the demands of good teaching and learning.

Effective Pedagogical Practice (TPACK)

Technological pedagogical content knowledge (**TPACK**) is a framework to understand and describe the kinds of knowledge needed by a teacher for effective pedagogical practice in a technology enhanced learning environment.

The TPACK framework looks at the relationships between technology, pedagogy, and content. A teacher capable of negotiating these relationships represents a form of expertise different from, and (perhaps) broader than, the knowledge of a disciplinary expert (say a scientist or a musician or sociologist), a technology expert (a computer engineer) or an expert at teaching/pedagogy (an experienced educator).



Punya Mishra and Matthew J. Koehler's 2006 TPACK framework

Williamstown Primary Schools App Selection

iPad apps are expanding the learning experience both inside and outside the classroom, making it more interactive, immersive, and engaging. Research has proven that when students are engaged, they are more motivated to be active learners, which in turn, results in improved student outcomes.

With so many amazing education apps available—and more being developed all the time—there's no limit to the exciting possibilities for learning. When selecting iPad applications for use within the school, we have many choices.

To guide us in these decisions there are five main factors that we will consider.
These five factors are detailed below.

Instructional design

- Does the app effectively communicate its subject matter?
- Does the app align to our learning goals for students?
- Does the app have a specific purpose and how does it achieve that?
- How does the app build on skills and guide the student?
- Are there relevant opportunities for feedback, assessment and reflection?
- Does the app offer personalized or adaptive features that are based on a student's skill level?

Accessibility (Differentiation)

- Does the app include a range of entry points to allow for users with differing skill levels?
- Does the app allow users to personalize the interface?
- Does the app offer collaboration and sharing opportunities?

Engagement

- Is the app intuitive?
- Is the app one that students will return to often?
- Does the app open up new ways to learn?
- Does the app allow new learning opportunities for students?

Developmental appropriateness

- Does the subject matter appeal to the intended grade level?
- Does the design appeal to the intended graphic level?

Motivation

- Is the learning content in the app at the appropriate level for our students?
- Will our students want to revisit the app often?
- How does the app build on existing skills?
- Do the methods used to motivate align with our learning goals?
- Does the app provide a connection from the classroom to the real world for expanded learning (for example, via GPS, Wi-Fi or Bluetooth)?

Further areas of app selection

Collaboration

- Does the app allow students to collaborate?
- Does the app allow effective, monitored communications?

Creation

- Is creativity increased?
- Is personalization amplified?

Sharing

- Will the app allow for an increased audience?
- Is 2 way feedback channels opened?

These questions have guided us in our choice of app selection and will continue to guide us in providing the best possible learning opportunities for our students.