

Context

Wallarano Primary School is a large, multicultural primary school situated in Noble Park, Victoria. The school has an ICSEA score of 967 and services a culturally rich community of 689 students representing over 40 nationalities, of which 55% are from a non-English speaking background and speak a total of 45 different languages. The school has a Student Family Occupation (SFO) Index of .6796 (compared to state-wide median density of 0.5130) and a Student Family Occupation and Education (SFOE) of .5634, both measures demonstrating a high relative level of student disadvantage.

Wallarano places strong emphasis on students' ability to develop their own knowledge construction, to work collaboratively, to self-regulate, to communicate skilfully, to use Information and Communication Technologies (ICT) for learning and to be innovative and real-world problem solvers. Teaching students to think mathematically and scientifically, to develop high literacy achievement, and to strengthen student engagement and wellbeing, are all high priorities.

Project overview

Issues Identified

Wallarano recognised that some students did not have access to digital technologies in their homes which meant they were not developing digital literacy. They also identified a need for more opportunities to apply learning for real world problem solving.

Vision

To provide all children with access to excellent teaching enriched by cutting edge technology.

Actions

Wallarano created resources and provided professional development for teachers and inclusive programs to enable all students to thrive. Leaders developed STEM inquiry units and integrated technology into their delivery and introduced design thinking into the school.

Outcomes

Students are exposed to practical, real-world experiences and equipment incorporated into STEM units of work. Teachers have a better understanding of relevant future skills for students, and their capacity around collaboration and teamwork, construction of student knowledge and using ICT for learning has been built.

Impact

Students have become critical and creative thinkers able to collaborate and engage in the wider community. Learning outcomes have also continued to improve with high relative growth at twice the state average.



What happened during the project?

The first step was to build teachers' knowledge and confidence about ICT and its use for learning. Wallarano created a Digital Sandpit program allowing teachers and students to learn together about digital tools, robotics and other technology, including augmented reality, zSpace and 3D printers, in a safe environment through play. While the Digital Sandpit Program was primarily designed for staff and students to learn together in class, early on, sandpit sessions were also held during staff meetings, creating a low risk environment for staff to explore technology.

The leadership team employed a Digital Technologies Learning Specialist who delivered specialist lessons. Having gained confidence to use ICT, teachers built their skills by attending these lessons with their classes to learn more about coding and digital tools such as robotics, 3D printers and virtual reality. This enabled authentic development of staff understanding. Where staff needed to learn about a specific application, program, initiative or assessment piece, they formed small, targeted professional development groups for individualised learning. As staff and students learned how to use the equipment, more structured lessons were introduced, incorporating STEM challenges. A STEM and DigiTech website was created to support teachers in their delivery and assessment of the Victorian Curriculum Digital Technologies strand.



At Wallarano, STEM learning includes critical and creative thinking, design thinking and the integration of STEM subjects. Inquiry STEM units were designed with the support of an education consultant and staff were supported with professional development. The professional learning staff had accessed around digital technologies provided a foundation of confidence for using the planned STEM units and the Digital Technologies Learning Specialist had dedicated time to assist year level teams with their STEM Inquiry focus.

2017

- F-6 one semester of weekly DigiTech specialist lessons, with class teachers participating
- Digital Sandpit sessions for teachers during staff meetings
- Year 1-6 Digital Sandpit sessions

2018

- F-6 one semester of weekly DigiTech specialist lessons, with class teachers participating, focusing on Digital Systems and Creating Digital Solutions
- F-3 Digital Sandpit sessions
- Year 4-6 introduced STEM Challenges
- Introduced Design Thinking model to be used across the school
- STEM/DigiTech website created to support teachers: <http://digitaltechnologiesandstematwallarano.weebly.com/>



2019

- F-3 Digital Sandpit sessions
- Inquiry units of work being trialled
- DigiTech/STEM focus in some units
- Digital technologies embedded in classroom activities.

What changed for the students?

As teachers have gained the confidence and ability to use digital technologies effectively in the classroom, authentic learning tools have been used to inspire students to build their digital technology skills and learn coding. Students have improved their problem-solving skills and their ability to explain computational thinking and have developed reasoning skills around the different strategies they can use to solve problems.

Students are accessing learning that incorporates critical and creative thinking skills, collaboration and problem solving. They are involved in real-life learning and are sharing this with members of the school community.

“Learning is better. Science and maths are my favourite subjects now. Learning is hands on and that is what I like!”

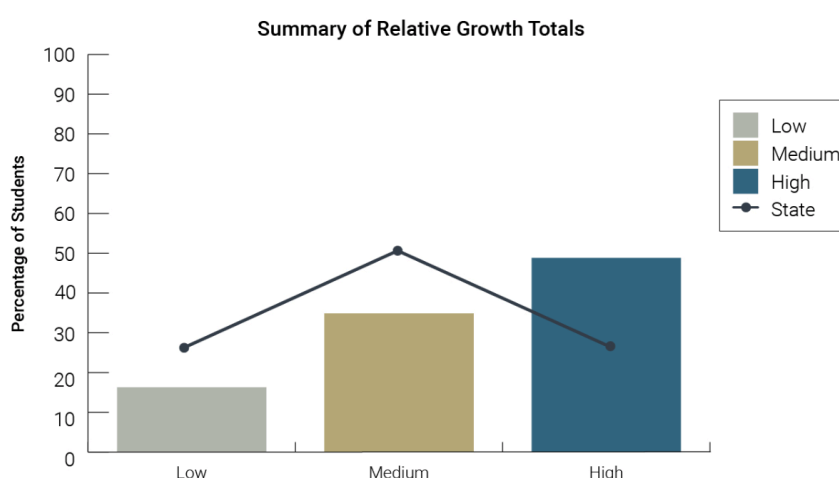
Maddie, student

Over the duration of the project, NAPLAN numeracy results have continued on an upward trend, with Wallarano Year 5 high relative growth at almost double the state average (49% compared to 25%). Students at or above ‘C’ in Semester 1 were as follows:

- 86% in Digital Technologies
- 77% in Mathematics
- 82% in Science.

School performance data for 2018 shows Wallarano achieving well compared to state averages and highly compared to schools of a similar demographic. Notably, parent satisfaction is above state average and attendance rates are above 93% (with Year 6 student attendance at 96%).

Year 5 Relative Growth



“It has made schoolwork easier as we are more engaged, enthusiastic and motivated to learn. It feels like there is less pressure as we now know it is okay to make mistakes because you learn from your mistakes”

Kylie, student

49%

49% of Year 5 students in High Relative Growth NAPLAN band - almost double the state average of 25%.

98%

98% students received C or above for Digital Technologies in 2019.

96%

Attendance rates are above 93%, with Year 6 student attendance at 96%.

Where to next?

Wallarano continues to implement new STEM inquiry units across all year levels. They will focus on consistency of practice, using the design thinking and inquiry model, ensuring a focus on a guaranteed and viable curriculum. This will be achieved through the Professional Learning Community cycle of learning, reviewing how digital technologies are used in Inquiry and Mathematics to inform continual improvement, and developing rich learning tasks with a focus on the Mathematics proficiencies, digital technologies and real-world problems.

Key Insights

Wallarano learned that the following were important to success:

- **Vision** – The school found a clear vision shared by all stakeholders was vital for successful change and that the identification of key stakeholders and the type of skills needed for this to work was imperative. The development of staff understanding of STEM and the belief that it will benefit student learning was the most important element and needed time to develop.
- **Leadership** – A strong and passionate technical leadership was essential, including a solid team of digital technicians and a dedicated and highly skilled Leading Learning Specialist. The Leading Learning Specialist must be timetabled to access team planning and classroom lessons in order to provide guidance and support, and to empower teachers and students to take on the challenge of the STEM approach.
- **Resourcing** – Extensive and continuous in-house professional development was provided. Wallarano resourcing started small, purchasing only a few pieces of equipment at a time and trialing how they could be tailored to learning, before buying more or deciding to go in a different direction. Free online resources were used when appropriate.
- **Planning** – Strategic planning over at least four years gave the time required for successful change.

There is more work to do on curriculum development and building greater understanding of STEM, design thinking and inquiry models.

The importance of collaboration

Q&A with the School Principal

Q: What has made SVA a productive partnership for your school?

SVA brings current, relevant and innovative research and exposure to high quality educationalists (state, interstate and internationally) to collaborate with and learn from.

Our partnership has been such a positive journey. Each next step we need to take, we find that SVA can help. It's a relationship that we highly value and trust. When SVA presents new findings or products we are confident that rigorous research has occurred to ensure they are of a high quality. This includes building staff leadership by bringing current research and highly qualified professionals to the Thought Leadership Gatherings (TLGs).

SVA collaborates with many organisations such as Samsung, empowering partnerships that assist schools in delivering high quality and equitable education for disadvantaged students. SVA staff are extremely supportive, giving relevant advice and making connections within education and the corporate world.

Q: Outside of SVA itself, what has been the most productive partnership you've developed through your SVA project? Why has it been productive?

This would be working with DET within a Community of Practice to develop Student voice and agency. After connecting with schools from SA through SVA, we saw how powerful student agency is for learning. This has become a priority for us.

Contribution of another school to your journey

Working with SVA has given many Wallarano staff members the opportunity to visit and observe many excellent schools across Australia and in the UK. South Australian schools have been the schools from which we have taken many positive strategies and directions – probably more than anywhere else. The focus on STEM and student voice is of interest to us in order to further enhance our focus on developing self-regulated learners.

Prospect North Primary School, SA, have helped us build our understanding and ideas of how we can approach inquiry and student voice to work with children to make education a learning partnership.

The Connection International Exploration tour to the UK has had an impact on the way we view education, providing a wonderful opportunity to experience the work of many disadvantaged schools. This allowed us to focus on how to refine the systems and processes needed to improve education delivery, including implementing a detailed oral language focus for our younger students.

The UK-based Education Endowment Foundation's work on best practice strategies and impacts is a brilliant tool that we continue to refer back to. We have been particularly influenced by its work on metacognition.



The use of Samsung Technology



The partnership with Samsung Electronics Australia enabled Wallarano leadership to provide teachers and students with access to a range of cutting-edge digital technologies, including Galaxy Books, Samsung phones and headsets, Gear 360 cameras and Samsung FLIP digital flipcharts. The FLIP has been an essential asset to the everyday classroom, facilitating collaboration for students and teachers alike. The Samsung phones and headsets provided an engaging way to discover the world of virtual reality technology, allowing students to explore all corners of the world without having to leave the classroom – a great advantage for a school where they may otherwise lack access.

New technologies present challenges and require staff training. This was usually accomplished by letting one teacher explore the new technology first in their teaching space before the students were introduced to it. They could then share the equipment and their learnings with other staff members.

Having Samsung technology has created opportunities for greater student engagement. Samsung has provided students with technology that they otherwise would not have access to, allowing our students the same benefits that children from advantaged schools have. It has assisted by levelling the learning environment; students can now use modern technology to advance their opportunities in the future.

Acknowledgements

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