

1:1 BYOD (IPAD) IMPLEMENTATION POSITION PAPER



1:1 BYOD (Bring Your Own Device) Program

St Thomas the Apostle School is beginning to plan a program in which students bring to school, for their own individual use during learning time, a personally owned iPad. This program is referred to as 1:1 BYOD (iPad). It is hoped the program will commence for students in Years 5 and 6 from the start of the 2016 school year.

This Position Paper seeks to outline the rationale behind such a program, the considerations needed to be explored and the implementation process planned thus far by the School Community Council (SCC).

Rationale

At St Thomas the Apostle, we believe that it is our responsibility to provide quality education which allows all students to develop to their full potential. It is important that teaching and learning reflects the needs of our students today. Our educational context should be oriented to their futures, not our past. We cannot ignore the development of technology and the opportunities it affords our students to create, communicate, solve problems and work collaboratively across all learning areas at school.

All schools must cater for the **diverse needs** of learners if they are to achieve their intended educational goals. St Thomas the Apostle, as part of its *Strategic Plan 2014 - 2017*, has identified the need to ensure *“teaching practices are underpinned by **contemporary, research-based, transformative** pedagogies. They include strategies to promote the safe, responsible and ethical use of **contemporary digital technologies** in teaching and learning.”*

In order to address the issues identified in the Strategic Plan, staff continue to investigate ways to further enhance the school's capacity to cater for diverse learning needs, using technology to promote **student-centred and self-directed** learning opportunities.

The Melbourne Declaration on Educational Goals for Young Australians (MCEETYA, 2008) states that *“rapid and continuing advances in information and communication technologies (ICT) are changing the ways people share, use, develop and process information and technology. In this digital age, young people need to be highly skilled in the use of ICT, while the Australian Curriculum states that ICT will **“transform the ways that students think and learn and give them greater control over how, where and when they learn”**. Both of these key national statements on education in Australian documents acknowledge that the use of ICT is crucial in meeting today's educational outcomes. It is noted in the Melbourne Declaration that successful learners *“have the essential skills in literacy and numeracy and are **creative and productive users of technology**, especially ICT, as a foundation for success in all learning areas.”**

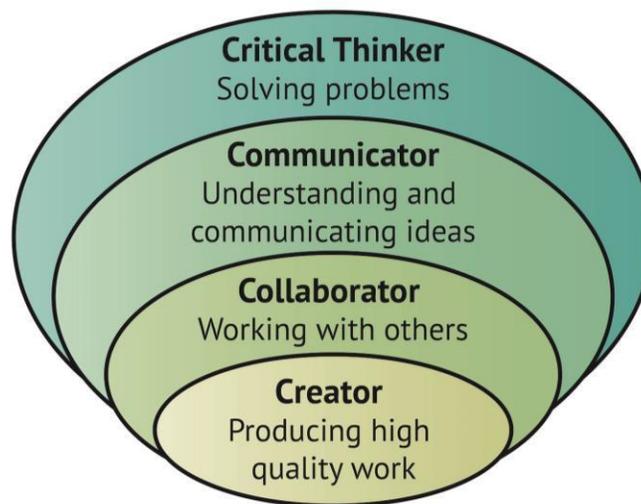
The use of ICT is an integral part of contemporary teaching pedagogy and the expectations with regard to the role of teachers in using ICT are articulated in Standards 2.6, 3.4 and 4.5 of the Australian Professional Standards for Teachers. The effective use of technology is also embedded in the *Archdiocesan Transforming Teaching and Learning Framework* and the

Quality Teaching Framework, for teachers in Archdiocesan Catholic schools. It is no longer the case that the use of ICT is a helpful addition to learning or a part of the wider curriculum; ICT is now shaping and transforming how all subjects are learned and how teachers facilitate the educational context.

Literature Review

21st Century Skills

While the core subjects of literacy and numeracy are key to the development of our primary school students, according to Robinson (2011) *“the current education system was designed for a different age. Our children are living in the most intensely stimulating period in the history of the earth. They are being besieged with information from all platforms and we are penalising them for getting distracted.”* Due to technological advances *“65% of today’s students will be employed in jobs that don’t exist yet”* (Wolfe, 2013). As educators we need to teach our students skills for learning in the 21st century. Researchers point to the importance of a focus on the 4Cs of 21st Century Learning. Tucker (2014) suggests that education systems need to infuse the **“4Cs (communication, collaboration, critical thinking and problem solving, and creativity and innovation)”** into their practice, to assist in preparing students for their role in the world and support them in developing the capacity to cope with *“accelerated technological change”*. This perspective is reinforced by Donovan, Green and Mason (2014) who argue that the 4Cs are *“learning and innovation skills necessary to prepare students for increasingly complex life and work environments in today’s world”*.



The 4 Cs of 21st Century Learning

Use of Mobile Technology in the Classroom

A significant development in the field of ICT in recent years has been the development and uptake of mobile technology. Looi et al. (2010) note that while “*mobile devices are changing rapidly, important commonalities remain the same: **portability, mobility and versatility.** These functions make learning ubiquitous in and out of classrooms, **provide potential opportunities for collaborative learning,** and enrich the learning experiences with the support of technologies”.*

The rapid development of cheap and innovative programs, or apps, designed specifically for this new form of technology has had a major impact on education and the educational context itself.

It can be argued that Mobile technology can be **personalised to cater for individual student needs** with content being adapted or settings customised (Ciampa & Gallagher, 2013; Chou, Block, & Jesness, 2012) with greater ease and at more manageable cost than at any time in our past. Added to this, the functionality of the device can be **easily tailored to meet the needs of the user** by adding and removing apps. This enables students to choose how they wish to demonstrate learning from a range of multi-modal options (Milman et al., 2014). While it is also the case that, as never before, mobile devices also cater for a **range of different learning styles** (Ciampa & Gallagher, 2013) incorporating text, pictures, video, audio and multimedia (Liu, Navarrete, & Wivagg, 2014) and greatly differentiated forms of assessment, enabling students to demonstrate their knowledge and skills in increasingly individuated forms.

An increasing number of studies acknowledge the potential of mobile technology to cater for a range of learner needs in an **authentic** way. Fisher, Lucas and Galstyan (2013) have found that “*the accessibility of the iPad facilitated the **collaborations** between students. The **size, portability, versatility and tactile** nature of the iPad are four of the main factors that contribute to its accessibility”.*

They also explored the concept of public and private space when using tablet devices, identifying the ease with which students can change between them. Devices, such as the iPad, can perform well as both **independent and collaborative tools**.

Some of the key findings of the research conducted by Macquarie University for the NSW Department of Education and Communities, *Use of Tablet Technology (iPads) in the Classroom* (2012) are:

- increased engagement and motivation
- improved student knowledge and skills
- enhanced collaboration and communication between students
- learning for students easy to personalise
- ease of differentiation
- students enabled to easily produce a professional finished product
- instant access to provide just-in-time learning
- student-centred pedagogies supported with the iPad – students learn *with* not *from* the technology
- multimodal nature of the device afforded new opportunities for learning
- more timely and frequent feedback on student work
- intuitive and easy to-use tool with minimal technical help required

1:1 BYOD Mobile Technology and Learning

The New Media Consortium 2014 Horizon Report, notes that 1:1 BYOD devices in schools are a means of personalising learning, thus giving learners ownership of their learning. *“BYOD has profound implications for primary and secondary education because it creates the conditions for student-centred learning to take place”*. As noted by Chou et al. in 2012, *“with sound pedagogy and implementation, one-to-one learning has the potential to **transform the classroom into a true learner-centred learning environment** in which communication, collaboration, and creative problem solving flourish to create student-driven learning”*.

Incorporating student owned mobile technology into the school environment enables the creation of *“seamless learning spaces”* (Pegrum et al., 2013; Ciampa & Gallagher, 2013; NSW Department of Education and Communities, n.d.). These devices expand space and time for learning, and “formal and informal” learning. Such devices, in the hands of every student, afford seamless learning opportunities that **bridge the formal learning in schools, with the informal, outside of classrooms and schools.**

Situational Analysis

Over the last three years, St Thomas the Apostle has invested in Apple iPads to explore the educational opportunities that handheld devices can provide. The school initially purchased an iPad and an iTunes card for each staff member to enable teachers to explore apps they might be able to utilise in their classrooms.

Following this, fifty iPads were purchased for classrooms. There are seven iPads located in each of the infants’ classrooms for teachers to use for various learning experiences throughout the day. Eight iPads were allocated to the primary area for classes to share. Teachers can borrow from other classes if they require more iPads for a given activity.

A number of apps have been loaded onto the iPads with a specific focus on Maths, English and cross curriculum apps that facilitate the creation of digital content. The management of the installation of apps is centralised and teachers can request new apps as required. Teachers utilise the iPads in a variety of ways with usage varying from drill and practice to open ended creative tasks.

While evaluating the current use of the iPads, access and storage of the creative tasks produced by students on the devices was identified as an obstacle.

As iPads were developed as a personal user device, the school has experienced some challenges having multiple students use the one device for open ended long term projects. As the iPads are shared across and between grades, it is not always possible for students to work on the same iPad and to continue work begun previously, nor has the personalisation potential of the technology been able to be developed. Students, as part of a 1:1 BYOD program, would be able to store their work and personalise their device (iPad) to alleviate this problem. At the same time, teachers would be better able to monitor individual needs and progress through tasks using the technology.

There are a number of schools within the Archdiocese of Canberra Goulburn, and within the ACT Education and Training Directorate that have implemented a 1:1 BYOD iPad program. Catholic Education (CE) is encouraging of the concept as a form of technological innovation and is supporting its schools in this through the provision of technical support for this platform. The CEO has launched a program called T4C (Technology 4 Classrooms). This has been done to ensure that schools do not initiate technology based programs without first identifying the desired educational outcomes and all technical requirements necessary for success.

This year, St Thomas has investigated the feasibility of establishing a 1:1 BYOD iPad program for the students of Years 5 and 6. The school has adopted a four phase process: Planning; Preparing; Implementation; and Evaluation. As part of the preparation phase a number of issues were considered. These have been categorised into two areas:

- Pedagogical Considerations
- Technological Considerations

Pedagogical Considerations

The implementation of any technology program within a school must be based upon a sound pedagogical rationale. St Thomas the Apostle has a number of strategies and programs in place to cater for the variety of learner needs within the school.

As a number of schools within the Archdiocese have implemented similar programs, a visit was arranged to see a 1:1 classroom in action. Both the principal and the class teacher spoke positively about the impact the program had including the high levels of student engagement and changes in classroom pedagogy.

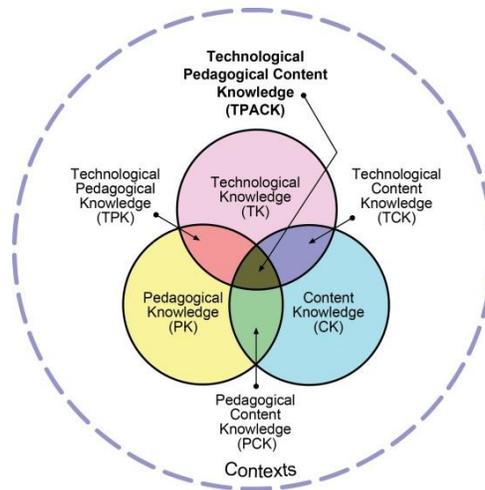
Critical to the success of the St Thomas the Apostle 1:1 BYOD program will be the pedagogy used to create an environment that accommodates diverse student needs. St Thomas the Apostle teachers are competent and experienced in integrating multiple technologies into the classroom.

At St Thomas the Apostle, we acknowledge that the successful implementation of any technology program is reliant on quality professional learning linked to the Australian Professional Standards for Teachers. We will continue to ensure that professional learning around the implementation of BYOD iPads:

- has a strong focus on pedagogy
- allows time for teachers to become familiar with devices and applications
- provides the opportunity to attend formal professional learning sessions
- engages in informal collaborations with other teachers and schools engaging in 1:1 BYOD programs
- uses the support of a learning technologies officer from Catholic Education
- builds a professional community of practice as a platform.

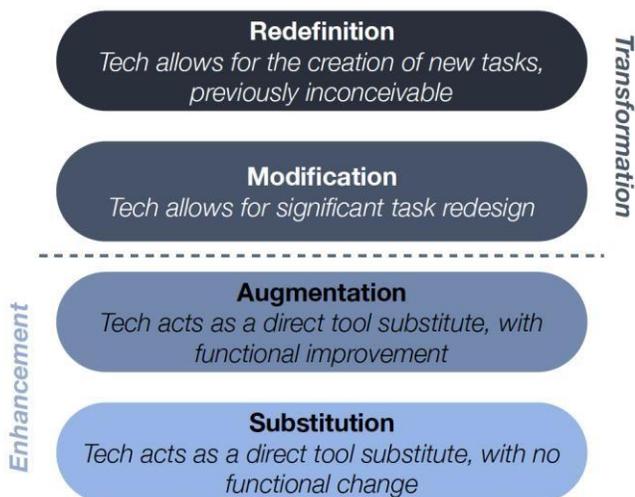
As illustrated in the literature, mobile handheld technology has an inherent capacity to be personalised and when used in a 1:1 environment allows easy, sustained and consistent access for individual students. When students use their own personal devices it can also create links between learning at home and school. The introduction of BYOD is consistent with the pedagogical literature that has been informing St Thomas the Apostle's Strategic Plan.

The **TPACK Framework** and **SAMR Model** are being explored at St Thomas the Apostle to build teacher understanding of how technology can be used to enrich learning opportunities.



TPACK Framework (Koehler & Mishra, 2008)

The framework represents the integration of three bodies of understanding: Technical Knowledge, Pedagogical Knowledge and Content Knowledge. TPACK illustrates that the inclusion of technology in an education setting is a complex and multifaceted process and that successful integration cannot be achieved without considering pedagogy and content.



The SAMR Model (Puentedura, 2009)

The SAMR (Substitution, Augmentation, Modification and Redefinition) model is also used to help teachers evaluate how they are using technology. The first two stages - substitution and augmentation - accomplish ‘traditional’ tasks that have been enhanced by the use of technology. It is in the next two stages - modification and redefinition - where technology can be used to transform learning and involve rich, open-ended, student-centred activities. It is our belief, based on the current and emerging research that BYOD represents the next step in the transformation of our educational context from one in which technology merely supports the initial stages of learning to one where students are genuine participants and co-creators of knowledge, skills and values.

Technological Considerations

Discussions were held with CE technicians early in 2015 and this process was formalised when the school enrolled in the T4C program in Term 2. All technical considerations were discussed with the T4C team with stable connectivity of wireless devices to the network being the main infrastructure issue identified. CE is currently working on solving the issues with the wireless network. The school has a broadband connection so bandwidth is not an issue. CE currently charges for downloads on a per student basis so there would be no cost difference caused by adopting a BYOD program.

The choice of platform (iPad) was determined by the provision of a stable technical support infrastructure provided by CE and they have also sourced favourable pricing regimes for iPad apps. While it is recognised that a variety of tablet devices now exist and each has its own strengths and limitations, the option of system wide support and the capacity to transfer learning and successful innovation across schools were determinative factors.

The school is currently investigating which iPad would best meet the requirements of this program particularly with the view to finding the most cost effective option for meeting the identified requirements.

Safety

Internet traffic at St Thomas the Apostle is filtered by the CE Internet filter 'Z-Scaler'. All iPads will access the Internet via this filter. Please note that when students use the Internet at home (or anywhere else) access will be filtered by whatever system is in place in that location.

Safe and responsible use of technology is an essential part of participation in this program. For many years St Thomas the Apostle has implemented an *ICT Acceptable Use Policy* and utilised a variety of programs and initiatives to educate students to be safe digital citizens. During 2014/15 the school has used the 'Cyber smart' and 'Think U Know' programs, and Australian Federal Police Education Officers have worked with the students in relation to cyber safety. Ongoing education about cyber safety and how to be a responsible digital citizen will be an integral part of the 1:1 BYOD iPad Program in 2016.

All participants (parents, students and teachers) in the program will need to sign and abide by the school's Acceptable Use and associated policies.

Implementation

To progress the implementation of this program a sub-committee of the SCC has been formed, with its membership made up of SCC members, school staff and parents from St Thomas the Apostle.

This sub-committee will determine the implementation process from here, and develop the appropriate guidelines and policies to implement and support a 1:1 BYOD program at St Thomas the Apostle. When these have been developed, and appropriate options for the provision of iPads for all students have been determined (with consideration of varied family circumstances), the committee will consult with the community before final ratification of the program. It is hoped the program will commence for students in Years 5 and 6 from the start of the 2016 school year.

St Thomas the Apostle acknowledges the support and advice of the principal and staff of the following schools in the preparation of this paper, and other documentation and support materials, in the planning and development of our 1:1 BYOD program thus far:

- Good Shepherd Primary School, Amaroo
- Rosary Primary School, Watson
- Sts Peter and Paul Primary School, Garran
- Holy Family Primary School, Gowrie
- Sacred Heart Primary School, Pearce
- St Bede's Primary School, Red Hill
- St Thomas Aquinas Primary School, West Belconnen

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