Bring Your Own Device

A Guide for Parents

We live in a world where the use of technology has become an integral and necessary part of our daily existence. Schools must incorporate and build on those real world experiences to be a meaningful part of students' lives.

An Investment in Education

Bring your own device (BYOD) refers to a model of technology use where students bring a personally owned (or family owned) device to school for the purpose of learning.

"The reality is that web-based tools and resources have changed the landscape of learning. Students now have at their fingertips unlimited access to digital content, resources, experts, databases and communities of interest. By effectively leveraging such resources, school authorities not only have the opportunity to deepen student learning, but they can also develop digital literacy, fluency and citizenship in students that will prepare them for the high tech world in which they will live, learn and work." (Alberta Education, 2012).

Many other authors also point out that these devices are a very significant part of students' lives (Clifford, 2012) (Sheninger E. , 2011) (Lee, BYOT, 2012) (Sweeney, 2012) (Walling, 2012). They argue that as these devices are integral to the world in which our students live they should be integral to their learning lives and their use will make learning part of their lives. "Ignoring or banning these devices only makes the school system seem further behind society than it really is" (DeWitt, 2013). BYOD "allows students access to the same devices at school and at home, it can extend learning opportunities to times and places outside of the classroom." (Horizon Project, 2013)

Characteristics of BYOD

Supports 21C learning

Bridges the home / school gap

Personalised learning

Greater access to information

Differentiated learning

Builds responsibility

Builds organizational skills

Increased student motivation

Increased student engagement

Promotes creativity

Greater collaboration

Sustainable technology use

The movement to a model where students bring personally owned devices to school is inevitable if schools are to maintain access to the tools required to provide effective contemporary learning experiences.

Benefits of BYOD

In a review of 359 academic works, Karsenti & Fievez (2013) found the following commonly reported benefits of using iPads in class:

1. Increases motivation

2. Facilitates access to, management of, and sharing of information

3. Fosters student learning and performance

4. Allows a wider range of teaching strategies

5. Fosters individualised learning

6. Improves the reading experience

7. Encourages communication and collaboration among students and between teachers and students

8. Improves computer literacy skills

9. Nurtures students' creativity

10. A highly portable tool

11. Facilitates student assessment

12. Improves the quality of pedagogical support

13. Facilitates learning how to write

14. Makes it easier to organize schoolwork and assignments

15. Students can make versatile and vivid multimedia presentations

16. Significant benefits for students with learning difficulties

Their further study of 6057 Year 6-10 students and 302 teachers across 18 schools concluded that the iPad has enormous educational potential but is not necessarily problem free. The key to successful integration of the iPad in the classroom, and arguably for all newly introduced technologies, is to provide teachers with adequate training.

Reviews from Australian Education

The iPad, as a device, has functionality and features that enhance its use as an effective and engaging learning tool. iPads in the trial had a significantly greater educational impact and were more successfully implemented in primary and special school settings. *Department of Education Victoria*

The benefits of the iPad as an assistive device for students with multiple impairments were overwhelmingly positive, with great feedback from trial teachers, students and parents. With an increase in student engagement, introducing iPads is a step forward for technologies used in special education. *Department of Education, Training and Employment, Queensland*

When part of a balanced educational program, tablet devices can be powerful tools for improving literacy and numeracy outcomes. The combination of engaging tasks, multi-sensory input and immediate feedback can be highly effective in helping students meet curriculum requirements. *Department of Education, Western Australia*

A pilot study found that despite some methodological caveats, the *iPad* is a significant tool to support and enhance student learning. The *iPad* showed extensive affordances as a learning tool (due to its portability and fit-for-task suitability) especially in relation to the development of Critical Thinking, Problem Solving, Decision-Making, Research and Information Fluency. *Catholic Education Diocese of Parramatta*

A summary of the research across six states in the USA (Argueta, Huff, Tingen, & Jenifer O. Corn, 2011) found many positive effects. They found that students in these programs had become more self-directed learners and were more engaged and motivated while teachers were shifting to more student centered practices.

Challenges of BYOD

The implementation of any new technology is bound to present challenges. However, due to the work of pioneering schools, those challenges have mostly been identified and can therefore be planned for and addressed through policies, digital citizenship education, the correct network infrastructure and mobile device management. The more common concerns are:

1. Network infrastructure is a critical component for effective use. Schools must liaise with the relevant personnel from an early stage to ensure that appropriate modifications are in place to ensure that all devices will have adequate access to the school network and the Intranet before students bring devices to school.

2. Inappropriate use by students should be covered by an Appropriate Use Policy (AUP), which outlines consequences for misuse. As the devices are for home and school use the school should liaise with parents to formulate this policy.

3. Equity is often the first issue raised but it has an opposite side. If a majority of parents are in favour of supporting BYOD then it is not equitable to not allow the program to be implemented for them. The school will need to make provision for any families who are unable to provide a device by supplying a device of some type and/or structuring the task to meet the leaning needs with minimal use of technology.

4. Use of the devices is not a distraction for students who are properly engaged in the classroom tasks. If students do not make effective use of their device then this would be dealt with through the AUP.

Technology generally gets the blame when things don't go right. Most often it is the implementation and planning, or lack thereof, that is the reason. In the aforementioned cases, the main reason why BYOD has been successful is because the schools involved focused on building teacher capacity and improved learning outcomes, rather than simply chasing technology. They have planned thoroughly and have supported committed teachers who are making the most of the technology in their classrooms.

Examples of BYOD failures do exist but are far fewer by comparison to the success stories. In each case, by carefully reading the reason for the failure, it will be apparent that there was a lack of vision and planning thereby expecting the technology to drive the change.

The highly regarded *NMC Horizon Report: 2015 K-12 Edition* examines emerging technologies for their potential impact on and use in teaching, learning, and creative inquiry in schools. This year BYOD is listed under Important Developments in Educational Technology for K-12 Education with an adoption time of less than one year.

The link between the use of personal devices and increases in productivity gets stronger each passing year as more organisations adopt BYOD policies. The integration of personal devices into the workflow supports an on-the-go mentality, changing the nature of work and learning activities so that they can happen anywhere, at anytime.

A number of reports are showing that BYOD is gaining acceptance in schools all over the world. In Canada, "Digital Learning in Ontario Schools" noted that 58% of schools reported that students were using their own devices. The report "ICT Trends in Australia" revealed that in 2014 there was a 77% rise in the adoption of 1:1 compared to 2013, and that an increasing number of schools are structuring their programs around student/ parent-owned devices.

Questions raised by parents

How will the devices be used in the classroom?
Devices are used solely for learning activities within the classroom. On occasion they may leave the classroom for the purposes of supporting a learning task. Use is at all times monitored by the classroom teacher. Devices will be used for the tasks they do best. If a task can be done more efficiently without the device, eg handwriting, then it will be.

Will they be used for games?
Devices will not leave the classroom at recess or lunch times for general student use. They will not be used as a reward in class and students will not play games unless there is an educational reason. Students will not play games on their device before or after school or when in class due to wet weather.

What device security will be in place?
Devices will be kept in a secure school location from the time students arrive at school until they leave in the afternoon. Rooms will be locked when the class is not in attendance.

What content security will be in place?
At school all outside connectivity is monitored through the school's Internet filtering system thus blocking access to inappropriate material. Parents would need to monitor home use the same way they currently monitor home computer access.

Can I control what the device can access?
If the device is an iPad, parents have the ability to easily control access to a wide range of functions including Internet access and messaging. This feature is password controlled by the parent. Check with the manufacturer for other devices.

Can students access social media?
All social media sites have an age limit of 13 years and are therefore blocked by the school's filtering system. If parents choose to allow access to these sites at home then they must monitor this.

"Research finds that students learn more when they use technology to create new content themselves, rather than just being the recipients of content designed by others."

Zielezinski & Darling-Hammond, 2014

Who pays for Apps?
Either the school can pay, or the parents or a combination of both. This needs to be made clear to parents at the outset of the program.

What Apps can be kept on the device?
The school will have a preference for a smaller range of creative Apps that can be used for a wider range of activities. Apps are used to support the learning not to replace the teacher. As this is also a home device students are able to include any Apps the parents approve. Students will need to create a separate page for personal Apps and be prepared to delete personal material if storage space on the device becomes a issue.

How will the school ensure responsible use?
Device use by students will be monitored by their teacher in the same manner as current classroom practices. Students will receive ongoing instruction on responsible use and Digital Citizenship. The AUP is in place for students who do not comply.

Will I know what my child is using the device for?
As your child is using the same device at school and at home they are more able, and willing, to share with you what they have been working on at school. This affords parents a greater opportunity to keep in touch with what happens in the classroom.

Does the school cover insurance?
School insurance does not cover family owned devices. Check your Home and Contents insurance as it is likely to already cover damage to personal items away from the home.

Can the device be left at School overnight?
Devices cannot be left at school as there would be no insurance coverage for it.

Will using devices at school cause eye strain?
Eye strain is caused by concentrating on a fixed point for a prolonged period of time. This could be a screen or a book. The American Optometric Association suggests adopting a '20-20-20 rule'. This means taking a 20 second break at least every 20 minutes and looking at something 20 feet (6 metres) away. This happens naturally in a classroom where students are working collaboratively, moving around the room and looking at other students work.

The closer the screen resolution is to the human eye itself, the better it is in terms of visual comfort. At the normal distances for tablets, the human eye's resolving power is about 240 ppi, the new iPad's retina screen display is 264 ppi.

Will more than 2 hours screen time be a problem?
The call for limiting screen time per day to less than 2 hours is in reference to entertainment based screen time at home. It is to encourage a healthy lifestyle that includes exercise and not in reference to daily school/work related activities.

Who will manage the devices?
Device management will largely be the student/family responsibility. Students are quite able to assist each other and allow the teacher to concentrate on the classroom learning activities. If a device is not functioning (including a flat battery) then the teacher will provide an alternative task for that student until the issue is rectified.

Can the school manage the device?
There are various models of BYOD management available from full school control to full family control. Most schools tend to opt for a shared model where the device is configured for school use but allows family control. Your school can provide details on the operational model they are planning to adopt.

How will my child identify their device?
By encouraging a personal choice of cover there will be sufficient variation for students to recognize their own device. Name labels and other identifying labels would also assist.

Will battery life be a problem?
Mobile devices tend to have a battery life that exceeds the daily time at school. It is the student's responsibility to ensure their device has sufficient charge for use at school. If a device does have a flat battery the student will be required to complete the class task in another way.

Do I need virus protection?
At this stage iOS devices (iPads) do not have any problems with viruses. The security of other devices would need to be checked.

What are the technical requirements?
The school will discuss the type of device required to meet BYOD requirements. In general students require a wifi only device, no 3G/4G. The only accessory required is a case with a hard cover to protect the screen when in transit.

How will teachers cope with the technology?
The teacher is the learning expert in the classroom so technical proficiency is of less importance than pedagogical proficiency. Teachers are already committed learners so will continue to undertake internal and external Professional Learning opportunities to expand their knowledge.

How safe is online collaboration?
The educational value of collaboration is well documented in research literature. At school level that benefit is achieved through secure and trusted online tools that are not publicly accessible.

How can I afford a device for my child?
The school recognises that funding BYOD can be a strain for families. To lessen the burden
- a new device is not required.
- if you already have a mobile device at home ask the school if it can be tried before you a purchase another device.
- makes an ideal Christmas / birthday gift
- update a parent device and pass on the older device for use at school

As a comparison, a cup of coffee a day for a school term is about the same cost as an iPad mini.

"Students perceive technology as part of their lives, not a tool or accessory. One-to-one programs improve student achievement and engagement, and change the classroom culture from teacher-focused to student-focused."
Schnellert & Keengwe, 2012

How will the school evaluate success?
The effectiveness of the project will be evaluated the same way in which all educational programs are evaluated. Qualitative data will come from classroom observation and the engagement of the student. Quantitative date will come from how well the students achieve the learning outcomes set by the teacher based on the curriculum.

How do I manage my child's usage at home?
BYOD is a partnership between the school and the family. Whilst educational use is the primary function of the device it is also available for use at home however the family wishes. BYOD use is built on trust and responsibility – at school and at home, the child need to show that he/she is a responsible user who can be trusted with the device.

At school, students abide by an Acceptable Use Policy. After school, parents are in control and they set the parameters of acceptable use at home. The device should not be used for anything or in any way that parents are not comfortable with.

Parents should set boundaries for where, when and for what purpose the device is used. Generally this will be in line with current boundaries already set for computer use at home. If you are not comfortable with a school related task being done at home, then discuss this with your child's teacher.

If you wish to limit the functionality available to your child then the iPad has a comprehensive selection of controls where access to the internet, messaging, App purchases and other functions can be blocked.

If you have a problem with your child's use of the device or require further clarification on any of the above information please contact the school.

"Progress has been outstanding"

The implementation of a one to one scheme using the iPad has been very successful. The devices have been well received by students and by staff and are increasingly well-used in the curriculum as their attributes and limitations are learned. There has been a significant and very positive impact on learning and teaching which, in time, should be reflected in achievement and attainment, thanks to both pedagogical changes and new ways of learning engendered by "any time anywhere" access to information and learning tools.

Progress in the implementation of the scheme has been outstanding. By sharing such strategies widely, other schools can adopt similar processes.

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