

# Tablets for Learning



## Learning Context

The increasing availability, adoption and use of tablets in many aspects of life outside school demands that we reflect on whether they can be purposefully used for learning in schools. The only reason to use ICT such as tablets in schools is to support, enhance and transform the learning experience in order to improve learning outcomes for students.

Though schools have much in common, in terms of learning objectives, each school is different in terms of its own unique blend of requirements, priorities, and challenges. When considering new technologies such as **introducing tablets**, school management and the ICT coordinating team should first consider school learning priorities and learning outcomes rather than just the technology aspects.

- As part of school self-evaluation process, identify overall school learning priorities and outcomes
- School e-learning plans should form an integral part of wider school planning
- Consider how ICT could help achieve these outcomes, and if tablets could support learning outcomes

## Attributes of Tablets to support learning

Tablets have different capabilities than other mobile computing devices such as laptops or netbooks:

- Tablets are **light-weight, portable, touchscreen, are ‘instant on’ with long battery life & use ‘apps’**
- Like laptops and netbooks, tablets are **multi-functional** mobile devices and can **support student centred learning**.
- The **instant-on capability** means that tablets can be used without any start-up delays in a variety of situations, and this facilitates their use into areas where ICT might not have been considered before. It also facilitates use for a number of shorter periods (eg., 10 minutes) during class. Laptops and netbooks take longer to start-up, and this fact alone is an inhibitor to their use for short periods. The **instant-on feature enables the possibility of ‘anytime, anywhere’ elearning** within school, in outdoor learning situations, or while on the move.
- As **students already live in the world of instant-on & touch technologies** such as mobile phones, **they perceive this as the norm**, and this raises similar expectations for ICT use in schools, which tablets can support.

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- Tablets generally have **longer battery life (typically over 8 hours)** than laptops or netbooks, and this additional capability over laptops makes them usable throughout an extended school day.
- **Tablets seem to require less technical support than conventional desktops or laptops**, and as such are being used increasingly in school situations where students 'bring their own devices' (**BYOD**). This model also lends itself to **students supporting their own devices. This is referred to as 'bring your own support' (BYOS)**. If tablets can **support differentiated learning** while significantly reducing the level of technical support required, this model could greatly benefit schools.
- Suitable educational tablets have **high quality, high resolution screens** and as such are suitable for literacy and numeracy related activities. They can be readily used by two or more students working collaboratively (ie., pair work).
- As **touch screen** technology has improved in recent years, tablets have innovatively used these improvements to provide the user with a higher quality of user **touch screen interactivity**, including **multi-touch** pinch, zoom, rotate etc., For more refer to: <http://en.wikipedia.org/wiki/Multi-touch>
- Tablets are **multi-functional devices** and generally have integrated tools such as **audio recording**, front and rear **cameras** for photos and two-way video links.
- **Tablet capability is extended by the wide range of applications or 'apps' available**. Tablets also support web browsing and online activities.
- Tablets **use screen 'auto-rotate', ie., the screen re-orient itself as the device orientation changes**, thus providing an improved user experience.
- Typing on a tablet is achieved using the **soft keyboard** (ie., on the screen), however external keyboard can be purchased for most devices, though at additional cost.
- Being wireless devices, **tablets generally don't have the same level of physical connections as laptops**, though some have mini-USB ports, or expansion memory slots. Tablets generally **have less memory storage than laptops**. As such **tablet users may use online or cloud based services**, such as 'dropbox' for storage or collaboration.
- **Tablets are continuing to evolve to incorporate new and innovative capabilities to support learning**. For example in April 2014 applications such as Microsoft Office (ie., Word, Excel and Powerpoint) were made available for the first time as apps for certain tablets, including the iPad.

## Educational Considerations

Educational possibilities for enhanced learning with tablets clearly exist, and there is a growing view that, **guided effectively by teachers, they offer the potential for a new and exciting era in education. Tablets offer new capabilities and opportunities for learning, mainly in terms of their flexibility, mobile capabilities, and ease of use. This model can provide students with a shared or individual multi-functional learning device 'in their own hands'. This has the potential to support student centered, independent, differentiated and personalised learning.**

- In a classroom setting tablets have the potential to **support differentiated learning**, where each student can **engage with learning activities at their own pace**, using their own personal approach in a way that allows the whole class to be engaged in common activities, but where each student is engaging **at their own pace**.
- Where tablets are used by students, they may be used in a variety of ways. Students could work collaboratively in small groups sharing one or more tablets, or they may have access to their own device.

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- Where students have access to computing devices in school **the balance of 'learner control'** shifts from the teacher to the student. This in turn can facilitate and support **student self-directed, active learning** and can facilitate higher levels of **motivation and engagement** in students.
- **Students adapt quickly to new technologies** and tablets are seen as attractive learning tools by students and have the potential to introduce more **engagement** and **fun into learning**. Students increasingly have access to tablets and smartphones outside of school, and so can adapt easily to their use in school.
- **Tablets** may not support certain applications which currently require a laptop or desktop computer, such as a specialised CAD software package. Though some laptops may have higher technical specifications, the combination of tablets with a wide range of apps for learning are attractive for schools. **Also many apps are free or low cost, and are easy to install.**

### Good Practice Videos of using tablets in schools

The three videos highlighted here from the PDST Technology in Education website highlight relevant educational use of tablets in schools: (Click on the link to access the video)

#### 1. Using Tablet Devices in a Primary School:

This video shows how tablets are being used to develop active learning especially for literacy and numeracy. It demonstrates the use of tablets as a station activity with children engaged in active learning methods.



<http://www.pdsttechnologyineducation.ie/en/Good-Practice/Videos/#64065663>

#### 2. Story Writing Using tablets:

This video shows a story builder app being used on tablets and emphasises the process of story development. The children demonstrate that a variety of media can be incorporated into their stories. The mutual learning that took place is a particularly salient point.



<http://www.pdsttechnologyineducation.ie/en/Good-Practice/Videos/#64069464>

#### 3. ICT in the MFL Classroom:

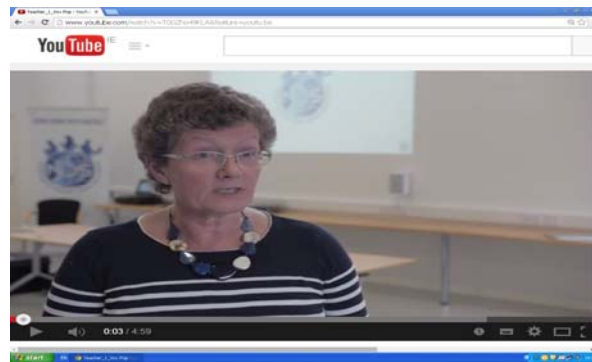
This video demonstrates using a tablet to support oral language development in Spanish.



<http://www.pdsttechnologyineducation.ie/en/Good-Practice/Videos/#42829461>

### **Students bringing their own devices/tablets/technologies: (BYOD/T)**

BYOD is worth consideration in terms of allowing students to bring in their own devices. The following video shows a clip of a post-primary principal talking about how BYOD is used in her school.



<http://www.youtube.com/watch?v=T0GZho49KLA&feature=youtu.be>

## **Software and Tablets**

### **Differences/advantages:**

- Tablets use specific 'apps' instead of more traditional software applications. There are increasing numbers of software 'apps' for education, including many for literacy, numeracy and other subject areas. There are also specialist apps available for different areas, such as science, and special educational needs (SEN) areas. Apps are generally available online via the Apple, Google or Microsoft online 'app-stores'.
- Many educational apps are free, or have a free basic version, while more featured versions are generally available at no more than a few euros. Apps are easy to install.
- There are many apps which can support students with special educational needs (SEN), including Dyslexia and ASD. Refer to links below.
- Some well-known document editing, spreadsheet and presentation software (such as Microsoft Office) have recently been made available on tablets. These types of developments may make tablets even more attractive than heretofore.

### **Software differences/limitations:**

- Tablets generally allow use of just one 'app' at any one time, whereas laptops can have a number of local applications running simultaneously.
- Tablet data or document formats may differ from PC or 'Apple Mac' type formats.
- Schools that wish to have ebooks on a variety of different devices need to check that their selected ebook publisher supports their range of devices.
- Tablets can't be connected (by LAN cable) to a fixed network as they are wireless only devices

### Purchasing Considerations

**Before a school purchases tablets, it would be important that the school is confident that the chosen tablet is the 'right learning choice' for the school.** Seeking advice from a similar type of school that is already successfully using tablets to enhance learning is an excellent way of getting relevant up to date contextual information and feedback. This could also be achieved by some teachers evaluating tablets in different learning situations or subject areas, discussing with colleagues and with other schools, in the wider context of elearning planning. Following this evaluation the school should have a more realistic expectation of the tablet capability and be in a better situation to make a decision.

The most popular tablet currently being used in education in Ireland is the iPad. Android (developed by Google) based tablets are also available from a number of providers. Microsoft introduced its Surface tablet. The Surface is the version used in education, while the Surface Pro 3 and 4 have a higher technical specification and are more expensive.

If a school places a priority on students having access to mobile learning devices in class, then it comes down to a choice between laptops/ netbooks on one hand or tablets on the other. The latest type of lightweight, touchscreen, tablet devices have only been available since 2010, when iPad was initially launched, and new models from different manufacturers appear regularly, with additional capabilities being added each year. New models are generally available within one year, while older versions may then become less expensive to purchase.

Given that tablet technology is relatively new, it is still changing quite rapidly. There is a lot of useful, online information on tablets, including regular tablet product reviews and comparisons. In order to be in a better position to make informed choices, schools should check out relevant websites, (**Refer to weblinks below**), so as to get a balanced view of what's available. Also be aware that not all models that are listed on websites in other countries such as UK and USA are available or supported in Ireland.

### Introducing tablets to a school:

When introducing tablets to a school a range of approaches can be taken including:

- Tablets are introduced initially for teachers so that they can become familiar with the tablet capabilities and develop confidence in their use.
- A small number of tablets are introduced per class for student use to facilitate group-work
- A set of 15 (eg. for pair work) or up to 30 devices are introduced as a shared resource to rotate among different class groups
- A number of tablets are provided 'permanently' to class groups
- A 'bring your own device' (BYOD) model could be considered, where students are allowed to bring in their own devices, rather than the devices 'lying idle', at home during the school day.

### Funding Approaches:

Funding the introduction of tablets to schools can be expensive, so schools may want to consider allowing students bring their own tablet devices to school. Lack of school funding worldwide is a key reason why BYOD is happening more in schools.

### Recommendations:

- Before making decisions consult with your stakeholders (teachers, students, parents) in the school
- Review the schools AUP, issues will happen, so when 'incidents' occur they should be seen as 'opportunities for learning'
- In a 'BYOD model' resolving 'breakages/ insurance' issues should no longer be the responsibility of the school. Instead the responsibility should shift to the students' parents/guardian, as the owners of the devices. This can be specified in the revised 'BYOD AUP'.

### Tablet Costs

The cost of 'suitable' educational tablets can vary from approx' €250 to over €700 (including VAT). Lower cost and quality versions generally have less memory, typically 16GB while higher cost versions typically have between 32 GB and 128GB. Higher quality educational tablets have higher quality displays and are supported in terms of availability of educational apps, and a range of warranty options.

- Before purchasing check with providers as prices can change frequently.
- Older versions of tablets may be available at lower cost than the latest newer version.
- Additional costs may also be incurred in purchasing and installing a wireless network in the school, and in procuring a tablet charging/sync unit.
- Before deciding to purchase schools should consider the overall costs to the school.

### Connectivity to Wireless Networks

Tablets connect wirelessly (ie. using wifi) and do not have a fixed network connector. This means that the school will need to have a **‘fit-for-purpose’** wireless network in place, so that multiple tablets can simultaneously access the network or internet. As such schools should review the **section on Wireless Networks at [www.pdsttechnologyineducation.ie/en/Technology/Networking-Wireless-Networks/](http://www.pdsttechnologyineducation.ie/en/Technology/Networking-Wireless-Networks/)** . In contrast laptops or netbooks can be connected either via wifi or via a fixed network connection.

### Breakages and Accidental Damage

As tablets are mobile devices, they will be subject to the normal 'rough and tumble' of school life, whether they are being used only in school or whether they are also being taken home by students. It is inevitable that some breakages will occur. Damage to screens is one of the most common reported problems. In general screen damage is not covered by warranty and instead is covered under accidental damage cover. Purchasing agreements will vary for different manufacturers, so schools need to check these before purchase.

### Security and insurance

All new tablets purchased by a school should be added to the school's insurance policy. As tablets are small and easy to carry and conceal, they can be an attractive high-value target. As such they need to be carefully managed, especially if stored in the school during the week or at weekends.

### Tablet Trolley, Carrying Case, Charging

For schools considering purchasing a set for tablets for the school, tablet trollies, though not essential, may assist in securely storing, re-charging, and moving tablets around the school. Schools that have steps, uneven surfaces, sloping corridors or more than one building level, have reported that trollies are difficult to manage in these cases.

### Purchasing and Managing Apps

- A growing range of advice is available on selecting suitable education apps
- Apps can be centrally purchased and standardised to facilitate easier classroom management.

When purchasing, downloading and activating apps from online 'app-stores' individual purchasers are generally required to enter certain personal details such as email address, and credit card details before apps can be downloaded. Schools generally operate differently to consumers, in that a school may need to purchase apps for a group of students (e.g., a class group or a larger number such year group). In such cases schools should check with providers regarding the processes and tools that exist to make it easier for a school to manage apps in the school. In these cases where a school does not have the relevant expertise itself, it should consider seeking assistance from reputable external parties who have a track record of successfully working with schools.

### Equipment Warranties

Technical Support and warranty from different providers varies widely and schools needs to be aware of the risks involved. Some warranties may include resolving faults on-site in the school, and such a warranty would generally be more expensive, as it involves a technician calling to the school. A lower cost warranty may require the customer returning the device to be repaired.

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### **Making a tablet choice - relevant links**

In terms of making a choice, it's recommended to talk to other similar schools as they may provide practical advice and guidance as to what works and lessons they learned. In addition some suitable links are provided below. Again be aware that models listed on other country websites may not be available in Ireland.

### **Tablet Comparisons and Reviews**

<http://tablets-review.toptenreviews.com/>

### **PDST Technology in Education CPD Courses**

<http://www.pdsttechnologyineducation.ie/en/Training/>

<http://teachercpd.ie/>

### **Using iPads in the classroom for Coding, creativity and other subject areas (UK)**

<http://www.theguardian.com/technology/2014/jan/27/tablets-schools-coding-kids-education-ipad>

### **How BYOD Programs Can Fuel Inquiry Learning (USA)**

<http://blogs.kqed.org/mindshift/2014/01/how-byod-programs-can-fuel-inquiry-learning/>

### **Wikipedia**

[http://en.wikipedia.org/wiki/Tablet\\_computer](http://en.wikipedia.org/wiki/Tablet_computer)

### **Apps for Special Educational Needs**

<http://apps4stages.wikispaces.com/AppWheels>

[http://www.callscotland.org.uk/Common-Assets/ckfinder/userfiles/files/Wheel\\_of\\_Apps\\_V1\\_0.pdf](http://www.callscotland.org.uk/Common-Assets/ckfinder/userfiles/files/Wheel_of_Apps_V1_0.pdf)

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[www.pdsttechnologyineducation.ie/technology](http://www.pdsttechnologyineducation.ie/technology)