

Tablet PC or Tablet



Context and General Advice

Though schools may have a lot in common with each other, in terms of general learning objectives, all schools are different with their own unique blend of requirements, priorities, and challenges. As such when considering new technologies such as the purchase of **tablets (also known as tablets PCs)**, the school management and ICT co-ordinating team should consider the situation based on school learning priorities and specifically in terms of learning outcomes rather than in just ICT terms. The purpose of ICT is to support, enhance or at a later stage of development, to transform learning.

- As your school eLearning plan should form an integral part of the overall school planning process, it is appropriate to consider the purchase of new tablets or other ICTs in this context.
- Key questions include what are the learning priorities and desired learning outcomes for the school and how could ICTs help to achieve these objectives?

What are tablets and what can they offer schools?

In summary tablets are different than laptops or netbooks, and they bring a significant number of new and additional attributes to the learning experience.

- The latest generation of **lightweight, touchscreen tablets, can be turned on instantly**, and offer a number of differences for education in comparison to PCs, laptops or netbooks.
- Like laptops and netbooks, **tablets are portable and support student centred and classroom based learning and they are multi-functional devices.**
- The instant-on capability means that tablets can be used without any start-up delays in a wide variety of situations, and this facilitates their use into areas where ICT might not have been considered before.
- Laptops and netbooks generally take longer to start-up, and this fact alone is an inhibitor to using them for different situations including for short periods.

The **instant-on feature enables the possibility of 'anytime, anywhere' elearning** (or online learning/digital learning) for short periods in school, in outdoor learning situations or while on the move. This instant-on and multi-function capability is similar to that of the latest generation of smartphones or other handheld devices, and as such this raises an expectation, particularly in students, that the 'computers' that are used in school can also be instantly used for 'just in time' learning, and that learning opportunities are not lost or delayed by lack of technology capabilities.

- Tablets generally have **longer battery life (typically over 8 hours)** than laptops or netbooks, and this benefit again makes them very versatile and suitable for use throughout a long school day. For general use, once they are fully charged each day, they will not need to be charged during the rest of the day.
- Tablets typically have **larger screens than smaller handheld devices** or smartphones, and as such are more suitable for reading and literacy. They can also be used by two students working together (ie pair work), whereas smaller handheld devices are essentially single user devices.
- 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.
- Tablets generally have **inbuilt cameras**, some models having both front and rear cameras, which can be used for two-way video calling.
- Like other types of computers, tablets are **multi-functional devices** and their use is extended by the wide range of applications or 'apps' available.
- A tablet **screen content orients itself as the screen is oriented**, and this allows screen content to be optimised by the user to the most appropriate orientation, be it vertical or horizontal. This flexibility and facilitation of user choice and control helps makes for an improved tablet reading experience for users be they can access online or locally stored content in its most suitable viewing format.
- Writing on a tablet is achieved on the **soft keyboard** (ie. on the screen), which is a different user experience to laptops with in built keyboards, however it is possible to purchase an external keyboard for most models at extra expense.
- Tablets generally **don't organise files in folders and subfolders**, in the same way as do more conventional PCs.

Educational Considerations

Tablets do offer new capabilities and possibilities for learning and teaching, mainly in terms of their flexibility, mobile capabilities, and ease of use. For pupils they offer an alternative option to provide each student with their own learning device, which is light, has long battery life, easy to use and which can support independent, differentiated and personalised learning.

- Where students have access to computing devices in school **the balance of 'learner control'** can shift from the teacher to the student. This in turn can facilitate and support student centered, active learning and can facilitate higher levels of motivation and engagement in students. In terms of academic studies it is too early to say whether tablets can provide higher levels of learning or improved learning outcomes than other mobile learning devices.
- Children and **students adapt quickly** to new technologies. Tablets with their enhanced touch screen options are perceived by students as attractive and 'cool'. They also have the potential also introduce more engagement and fun into learning. Students that use smartphones and gaming devices outside of school are already well-acquainted with touchscreen technology, and as such the learning curve for students is 'not a problem'. Because they've become so accustomed to using smarter mobile devices, students are increasingly expecting to also use these kinds of devices 'even' in schools.
- **Tablets also have limitations**, and there are many PC or laptop capabilities that they don't have, but as developments happen, tablets will become more capable of performing more advanced tasks than they are today. The educational possibilities for learning with tablets clearly exist, and there is a growing view that, guided effectively and creatively by teachers, they offer the potential for a new and exciting era in education.

Software and Tablets

Differences/advantages:

- Tablets run different types/models of software than laptops or netbooks. They use 'smaller', more function specific 'apps' than traditional multi-functional software.

- There are increasing numbers of multimedia software 'apps' for education, including many for literacy, numeracy and other subjects. There are also specialist apps available for different areas, such as science, and 'special needs' contexts.
- Some educational apps are free, or have a free basic version, while more featured versions generally cost a few Euros, (though usually less than 5 Euros).
- Easy switching between tablet apps facilitates flexible learning activities with little delay.

Software differences/limitations:

- Tablets generally allow use of just one 'app' at any one time, whereas laptops can run a number of local applications simultaneously.
- Generally tablets don't support document editing, spreadsheets and presentation software (such as Microsoft Word) in the same way as laptops, instead some brands run similar type apps as an alternative. Tablets can also run browser based cloud versions, such as Google 'Apps' or Microsoft 'Live', as web applications.
- Tablet data or document formats may differ from PC or 'Apple Mac' type formats and therefore files created on a tablet may not transfer seamlessly on the other, or vice versa.

Note on iPad and using 'Flash' based applications

While the Apple iPad tablet is popular in education it differs from other tablets in that it does not support or display interactive 'flash' based content (including Adobe 'Flash' multimedia content). Schools should note that if they already use a lot of 'flash' educational websites, that these websites will not work on an iPad, instead the iPad supports the HTML5 standard for content.

eBooks and Tablets

ebooks (or electronic/digital versions of books), are becoming more popular as an alternative to 'heavy - as in weight' and 'static content' paper based books. In Ireland ebooks from educational publishers are generally being made available for laptops, notebooks and tablets, and for the Apple iPad, Google Android tablets and laptops/netbooks running Microsoft operating systems. Schools considering moving to ebooks need to check with their educational ebooks suppliers to make sure that the ebooks they are considering are supported on their choice of schools tablets, laptops, or netbooks.

Purchasing Considerations

The most popular tablet devices being used in Ireland today in education are **Apple's iPad, and tablets from a wide range of manufacturers which are based on Google's Android Operating System (OS). It is also generally perceived that a 'Windows 8' (Microsoft's next operating system), tablet may be available in 2013.**

Seeking advice from a similar type (ie. Primary, Post Primary or special school) of school that is already using tablets is an excellent way of getting relevant up to date contextual information and feedback. If your school has a priority of students having access to computers in class, then it probably comes down to a choice between laptops/or netbooks on one hand and tablets on the other. Both are portable but are quite different to each other. Schools need to be aware that tablets can't do everything that a laptop can do (and vice versa) as they are different, and each has their advantages and disadvantages.

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 are still coming out regularly, with additional functions and features, so they will continue to change and evolve in the next few years. This will most likely mean that once a purchase is made, that there may be a newer version available within 6-12 months, and from that point older versions may become less expensive.

Some additional questions:

- How many hours will it run on its battery?
- What's the memory size?
- What are the options for charging?

- What are the options for synching or downloading apps simultaneously to more than one device?
- Trolley/case options?
- What's the screen size/resolution?
- What are the keyboard options?
- How does it connect to a projector/interactive whiteboard, ie is an extra cable required?
- How do I purchase apps?

Evaluating tablets in the school

Before investing in a set of tablets for a school it would be important that the school have confidence that the chosen technology is the 'right learning choice' for the school. This could be achieved by at least one or two staff members using websites and intended pedagogies and practices to test the tablet technology in various learning situations in different subject areas, discussing with colleagues, and considering integration of ICT as with respect to 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 further decisions.

The school may need to consider:

- Is it going to provide tablets to teachers only?
- Is it going to purchase a small number per class to facilitate group work?
- Is it going to purchase a set of 15 (eg. for pair work) or 30 to share between classes (similar to laptop trolley arrangement)?
- Is it going to implement one to one computing, providing a tablet to each pupil?

Other considerations:

- Can pupils take them home?
- How does the school decide on & purchase apps?
- Can they be downloaded centrally and synched to all tablets?

Tablet Costs

Tablets costs from different manufacturers vary widely from approx' €100 up to €700 each. Lower cost versions generally have less memory, typically 8GB to 16GB while high cost versions typically have 64GB, and higher levels of functionality such as dual cameras. Higher cost versions also tend to have higher quality displays and be well supported in terms of availability of educational apps, a range of warranty options, as warranty may be sold as an option.

- Before purchasing refer to 'Additional Information/links on tablet PCs below, as prices change frequently.
- Older versions of popular tablets (eg. such as the iPad2) tend to be available as refurbished versions at a lower cost than the latest new version.
- Additional costs may also be incurred in purchasing and installing a wireless network in the school, and in procuring a trolley for the tablets.
- Before deciding to purchase schools should consider overall costs to the school.

Connectivity to wired or wireless networks

Tablets connect wirelessly (ie. using wifi) and generally do not have a fixed network (eg. RJ-45) LAN connector. This means that the school will need to have a wireless network, so that tablets can access the network or internet via wireless. As such schools may want to **review the NCTE ICT Advice sheet on Wireless Networks at www.ncte.ie/ictadvice**. In contrast laptops or netbooks can connect either via wireless (or Wifi) but can also connect via cable to a fixed network connection. Tablets can also be purchased with 3G mobile network access, however this mode of connectivity is not usually applicable in schools, and incurs additional monthly mobile network costs.

Technical Support and Warranty

Technical Support and Warranty from different manufacturers varies widely. In some cases (typically for lower cost models) a low level of online technical support may be provided. Warranties vary widely in quality, from very poor to better models, so additional vigilance is required, and the school needs to be aware of the risks involved. Some warranties require the customer to pay the cost of returning the device

to the manufacturers warranty provider, to be assessed and repaired. These may be referred to as 'return to base' warranties and can be quite expensive.

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 in some cases they will break or be damaged. Damage to screens, cracked screens is one of the most common reported problems. In general screen damage is not covered by warranty and may be covered under accidental damage cover. Purchasing agreements will vary for different manufacturers, so schools need to check these before purchase.

Keyboard/Typing

Tablets generally don't have physical keyboards as standard. Typing on a tablet 'soft' keyboard (ie on the screen) without a keyboard is a different experience to typing using a standard keyboard. Adding external keyboards incurs additional costs, and external keyboards using 'bluetooth' connectivity tend to drain the battery much faster, reducing overall battery up-time. As tablets are quite new it is not surprising that opinions will differ on whether the different user interfaces are considered to affect the quality of student writing.

Connectors/Ports:

Being predominantly wireless devices, tablets generally don't have the same level of physical connections as laptops or netbooks. As such getting data out and into tablets may require some lateral thinking.

Trolley for Tablets, Carrying Case, Charging

For schools considering purchasing a set for tablets for the school, in the same way as laptop trollies have been used by schools for a number of years, so too tablet trollies can be used to securely store, re-charge, and move tablets within the school. If a school is purchasing a set of tablets, it should check the trolley options and costs.

Security Management

All new ICTs (including tablets) owned by the school should be added to the school's insurance policy. As tablets are lightweight devices, they are easy to carry and conceal, and therefore can be easily stolen in a short space of time. They are also perceived as high value attractive target items. As such they need to be carefully managed. If tablets are stored in a school during the week or at weekends, they could be seen as high risk targets. This situation needs to be considered as part of the overall school security policy. One possible option is not to store them in the school and that students take them home. This will raise a number of new challenges. In the years ahead it will likely become the norm that students will bring their own devices to school. This is being referred to as 'bring you own device' or BYOD.

Seeking additional Information on Tablets

Given that tablet technology is relatively new, it is still changing quite rapidly. There is a lot of useful, up to date, information on tablets on the internet, including regular tablet product reviews and comparisons from technology websites. In order to be in a better situation to make informed choices, schools should check out a number of websites sources, so as to get a wider and more balanced view of what's available. Some sites may be linked with certain manufacturers. Also be aware that not all models that are listed on websites in other countries such as the USA are available in Ireland.

So rather than give a list of tablet specific websites, which could change, we suggest that you use your usual search engine to search for 'tablet' related information using search terms such as 'tablet PC' and a local geographical term such as 'Ireland', so as to locate Irish based information and costs.

To find up to date tablet comparisons use terms such as 'compare 2012' in your search. These searches will provide both commercial providers and other more independent sites that provide reviews of different tablet models.

Seeking Additional Information on Educational Apps

There are thousands of educational apps available for different subject areas, and many are free to try out, however quality can vary a lot. Refer to www.scoilnet.ie/Educational_apps.shtm

Special Needs information and Apps

There are also specialist apps available for different special needs contexts, so when searching use the search terms such as 'tablet', 'special needs apps' and the specific area of interest such as 'dyslexia' or other specific area.

Some relevant websites:

Tablet PC

- Free educational apps
www.scoilnet.ie/Educational_apps.shtm

Classroom Application

- Interesting Ways to use the iPad in the Classroom
https://docs.google.com/present/view?id=dhn2vcv5_721gdk5jtd8

Special Educational Needs

iPad, iPhone and iPod Touch Apps for Special Education

www.scribd.com/doc/24470331/iPhone-iPad-and-iPod-touch-Apps-for-Special-Education

Note: While the advice sheets aim to act as a guide, the inclusion of any products and company names does not imply approval by the NCTE, nor does the exclusion imply the reverse. The NCTE does not accept responsibility for any opinions, advice or recommendations on external web sites linked to the NCTE site.

This Advice Sheet and other relevant information are available at:

www.ncte.ie/ICTAdviceSupport/AdviceSheets/