

Rationale for the use of iPads

We aim to provide the highest standards of provision to support our pupils' learning, including the use of information technology (IT).

While we have been developing our IT provision, new innovations in worldwide information technology have been introduced which have revolutionised the workplace, as well as the way in which we access knowledge and entertainment.

For a number of years, education has lagged behind in the practical application of this technology, requiring complicated and expensive equipment. Now, however, with the introduction of wireless Internet access, the development of websites with interactive activities and innovative methods of communication, and the invention of hand-held devices which are both easily portable and very powerful, the time has come to embrace the opportunity which such devices offer in the curriculum.

For many years, our strategic vision has been to provide anytime, anywhere access to IT resources, and to this end we have introduced a number of IT innovations to support pupil learning and independent enquiry.

In 2006, Queen's became one of the first schools to develop a Virtual Learning Environment which provides a stable and accessible platform for the sharing of teaching and learning materials and key information for staff, students and parents. Teachers are able to upload materials and class study notes in order for the pupils to access them. Pupils may log in to the VLE from home, and access the resources provided for homework and research purposes.

In 2011-2012 a campus-wide, wireless network was installed in the Lower and Senior Schools, thus enabling students with Smartphones and other individual computing devices to be able to access the Internet safely and securely through our network.

In 2012, we introduced a suite of iPads into the Lower School, to be used flexibly when the need arises, supported by [sound educational research](#) which has shown the benefits to very young children of using this technology to help them to learn.

Currently in the Senior School, all pupils (Y7-13) use their own iPad to support their studies. The iPad is utilised by the student in lessons and for homework and personal research. Teaching materials are accessed through the school network either directly from the Internet, from our Firefly Virtual Learning Environment, or through the use of specific educational application software (apps).

Our objectives:

To further improve the quality of teaching and learning at The Queen's School.

To prepare our students more effectively for learning beyond School in the workplace.

To enable all students to use IT more frequently to enhance their learning.

To ensure that students have immediate access to all learning materials on our Virtual Learning Environment on site and at home if the family has access to a WiFi Internet connection.

To enable all students to have immediate, filtered WiFi access to the Internet wherever they are on site.

Why iPads and not other mobile devices?

We have undertaken an extensive comparison of various mobile devices (laptops and tablets) from different platforms. In particular we have compared Apple iPads with devices running Android and Windows operating systems. Our results have shown that the iPad has a long battery life (10 hours) therefore it does not require charging during the school day. It is lightweight and portable, intuitive to use, has a range of inbuilt sensors and two cameras, is desirable and familiar and is competitively priced.

In addition there are an extensive range of low-cost or free apps, developed specifically for educational use for the iPad. In this respect it is the industry standard.

The Apple operating system is the only 'closed' ('sand-box') system used by mobile tablet devices that does not depend upon user involvement. This is significant because the Apple sand-box system improves the safety and security of the user and their work. In particular, there is a lower chance of data loss, redirection to unsuitable websites or compromising the security of the school network.

Only certified Apple apps may be installed on iPads. This means that the apps themselves are unlikely to contain viruses and can be restricted by age group. Some specific apps to be used for teaching and learning purposes at Queen's are only available on the iPad at this time (for example, the music composition software GarageBand).

In common with other schools in the UK and abroad we have therefore concluded that the iPad is the best device for our students to use for this purpose.

How do we know that iPads enhance learning?

Research Evidence:

Research on the impact of iPads is still emerging as the technology is so new, but there have been several studies published in the last three years which have shown the benefits of the use of personal mobile technology in educational settings.

It is becoming evident that other schools, colleges and universities in the UK and abroad are investing heavily in iPad technology.

A number of schools are issuing them in lessons for specific purposes, rather as we are currently doing in the Lower School. This 'traditional' approach has its merits, but a significant amount of research has shown that a far more powerful way of using such devices with older pupils is for the

children to 'own' the devices themselves - to have the device with them for every lesson and to therefore be able to make more flexible use of the iPad to support their learning on a daily, lesson by lesson, basis.

This approach is supported by a number of specific educational studies. In these studies, students were monitored in their use of personal mobile technology, and the impact of this personal ownership was measured in terms of their approach towards learning, how the manner of their learning was affected by their use of personal technology, and the impact on their results.

A study at the University of Abilene, Texas, indicated that compared to laptops, iPads gave students more flexible opportunities to work and increased student engagement and participation. The advent of iPad has fundamentally changed a teacher's ability to mobilise the student's learning environment, freeing them from the linkages typical laptop based computers have on access and interaction with other students. While iPhone made paperless classroom possible, iPad with its true mobility has made the paperless classroom practical with its functionality and versatility.

These results were mirrored in a study published by Oklahoma State University.

A detailed study based on the introduction of iPads as learning tools at Longfield Academy (a secondary school in Kent) emphasises the importance of students having personal use of the iPad and also demonstrates the efficacy of the iPad as an educational tool. The study concluded the following:

"... that with the majority of pupils at the school now having iPads there has been a significant and very positive impact on learning together with further significant and still developing changes in pedagogy. In particular it was found that:

- The overwhelming majority of teachers regularly use iPads in their teaching
- There is high demand from students for iPad use to be extended further
- Teachers have identified savings and significant benefits for their workload
- Use of the iPads is increasingly being developed for homework and beyond school
- Students are more motivated when using iPads
- The quality and standard of pupil work and progress is rising
- Both staff and student feel they can work more effectively with iPads
- Levels of collaborative working have improved
- Appropriate use of apps aids learning
- All find the iPad easy to use
- Minor technical issues have arisen but these are dealt with readily.
- Effective project management has been critical to the success of this development.

Other schools making use of iPads in this manner, for example Harrogate Grammar School, have also pointed to a rise in pupil engagement and improvements in results with the use of this technology.

By far the majority of our students leave us to attend university, and we have an obligation to prepare them as well as we possibly can for university life. Many of our students will undertake undergraduate research during the course of their studies.

Professor Mike Press (Professor of Design Policy and Associate Dean of Design at Duncan of Jordanstone College of Art & Design, the University of Dundee) has analysed the use of the iPad as a tool for research purposes at university level. In [Professor Press's blog](#), he points to a number of the iPad's features which makes it a very effective tool to aid research. He concludes: "The great thing about the iPad is getting away from bloated, over specified software that simply gets in the way of doing things. The apps [used by iPads], especially the outstanding ones, do only one thing, but do it spectacularly well, making full use of the iPad's interface." Professor Press found the iPad to be useful for note-taking, both in lecture theatres and in the field.

What features of the iPad will support effective teaching and learning?

1. The **web browser**. The ability to access the Internet at any point in a lesson, in any classroom (or other area) of the school will enable extension tasks, wider reading, the use of film clips and other video material, or interactive quizzes to be used more readily and more flexibly than having to take a whole lesson in a computer room.
2. Use of **The Queen's School Virtual Learning Environment** in school lessons. For a number of years departments have been uploading materials to this facility, including worksheets, quizzes, reading material, videos, examination papers, and lesson plans. The ability for all pupils to be able to access these resources and work immediately from them individually on a large device is of enormous benefit to teachers and pupils.
3. **The Camera**. Students are able to video classroom activities, or record static results in a fast and efficient fashion. They may, for example, record each other throwing the discus in PE, to analyse best form; record a conversation or presentation in a modern foreign language and then have be able to reflect on it in class or with a teacher; or they can take a photograph of an apparatus set-up rather than having to draw it, thus saving time.
4. **Apps**. There are an increasing number of apps that support education. Some are specific to particular tasks, for example GarageBand for music or Brushes for art. Others enhance student understanding of specific areas of the curriculum, for example York Notes for specific works of literature are now available in App form. Students are also able to create their own Apps, an educational experience in itself. Apps also provide new ways for pupils and teachers to work in the classroom interactively.
5. **Productivity Software**. Pages, Keynote and Numbers are compatible with, and share much of the functionality of Microsoft Office (Word, Powerpoint and Excel). Students continue to receive tuition in the use of Office and are therefore able to work flexibly between PCs and their iPad, editing and creating work in industry-standard software.
6. **E-Books**. Teachers create interactive resources for students. Texts may be downloaded and read by pupils, thus saving the weight of a conventional book. It is still early days for all publishers to be producing e-book versions of their textbooks, but wherever possible we are taking advantage of this

to save weight and prevent students from losing their books, or leaving them at home!

7. iTunesU. Our senior pupils benefit from access to this facility, particularly for research and extension activities. iTunesU is still in its infancy, but it provides courses and materials on a huge range of academic areas. Highly respected universities such as Harvard, Cambridge and Imperial College (London) have contributed to this educational initiative.

8. **Virtual Library.** Students take advantage of the Queen's Virtual Lending library which contains many fiction and non-fiction titles that have been selected by heads of academic departments to complement and extend areas of study. The virtual library allows students to borrow a book from the library wherever they have an internet connection, read it on their iPad, before it is returned automatically to school.

If you have any questions please do not hesitate to ask Paul Foster the IT Director. Alternatively you may find the answer in one of our Frequently Asked Questions.