Pupils and teachers are joining forces to boost handheld learning, says Seb Schmoller from the Association for Learning Technology

Seb Schmoller

Personal digital assistants, mobile phones, and ultra-light laptops or ultra-mobile PCs are defined as handheld devices, although some argue that any device can be "handheld" if it is mobile enough to be used outside of the classroom.

"Handheld and mobile devices are any that enable learners to be mobile," explains Andy Black, Becta's technology research manager and a member of the programme committee for the 2008 Association for Learning Technology (ALT) conference. Such devices free pupils and teachers from the constraints of the classroom or ICT suite, allowing them to refer to, capture and share information and thoughts from any location.

But they are not without controversy. Schools are still deciding whether to embrace pupils' own devices, typically mobile phones, or to ban them. Mr Black added: "There's definitely a case for trying to work with the devices that learners themselves own." In fact, a 2008 survey of 11 to 16-year-olds at Marden High School in Tynemouth, found that of the 519 pupils who responded, just three did not have their own mobile phone. The vast majority – 460 – were "experts", using their phones for texts, photos, videos and music.

Projects around the country are exploring the benefits of handheld learning devices. Some use pupils’ own tools, while others rely on local authority purchases, or invite parents to contribute funds.

Mr Black points out that in addition to pedagogical uses, mobile devices are also a medium to communicate with parents when children are unwell, and can allow pupils to report bullying or gain access to counsellors via text. They can also be used by teachers to remind pupils of assignment deadlines.

John Cook, professor of technology-enhanced learning at London’s Metropolitan University and vice-chair of ALT’s research committee, explained: "Pupils who have devices of their own or on loan for use inside and outside school are more likely to take the device everywhere and make it their own by customising the interface, loading music onto it and so on."

"This attachment also means that pupils will be more likely to use their device for personalised learning and on the move reflection," he added.

Mobile learning devices are helping pupils to develop their own portfolio online, to gather data for school assignments and to reflect on their assignments "on the move". They are also key for reflection and collaborative communication with others, whether teachers or fellow students. Some practitioners argue that these devices lend themselves to the "social constructivist" pedagogical model, where learners actively construct their own understanding and knowledge through their own interactions with each other, their teachers, and their environment.

Wolverhampton City Council’s Learning2Go project is probably the largest collaborative mobile learning project for pupils in the UK, with several thousand handheld devices provided to learners across all key stages.

Learning2Go says: "If learners are to use the power of the internet and all of the content and authoring tools that are now available, they need access to a device at a time of their choosing and driven by their learning needs."

Mr Black continued: "It’s not the specific device that’s key, what’s more important is what the learner does with it.

"Mobile devices allow children to access and organise their thoughts electronically at any time, from anywhere. For some learners this is very valuable."
Mr Black refers to emerging evidence that mobile devices are very positive for engagement and highly motivational. For example, mobile devices afford pupils of 15 or 16 who may be "sofa surfing" (living away from the main family home for a variety of reasons), permanent access to a social network and learning environment. Findings on the positive effect of the use of such devices when it comes to school improvement are also appearing.

Instead of grappling with the wide variety of devices owned by pupils and their compatibility, encouraging schools or local authorities to buy in bulk can be more effective than relying on pupils' possessions.

Also, content can be purchased specifically for handheld devices, although a wide range of resources are freely available on the internet. Software such as WildKey, which is used to identify mini-beasts, is becoming popular with schools – pupils photograph the wildlife, make a voice recording about its location and features, and record the location of the site (using GPS if the device is GPS-enabled). This can complement subjects such as geography, science and ICT.

However, David Sugden, of the Village E-Learning Consultancy and a member of the ALT, warned: "Teachers do need to purchase tailor-made content or to plan content specifically for mobile devices. Merely taking existing PowerPoint presentations and converting them doesn't work. For example, content for mobile devices needs to have a minimal amount of text per page that must be high contrast for it to be easily legible."

"Hot" curriculum areas for handheld devices are museum trips, geography field trips, and areas where graphical representation is important, such as maths and physics. Many schools are experimenting with mobile learning devices on field trips, for example gathering geographical information for analysis on return to the classroom. This also extends the field trip further into the teaching programme, rather than it remaining a one-off event.

For example, in the project Myartspace, pupils visit museums, "collect" artefacts on their mobile phones and upload images to a collaborative area where parents, pupils and teachers can comment and reflect on the pupil-generated content. Cardinal Newman Sixth Form College in Preston used Ultra Mobile PCs on a recent trip to Iceland, when pupils used them to blog about their adventures so that cohorts and parents could view their activities.

Sound and video files used with handheld devices can be very helpful when teaching English as a second language. They are also ideal for multiple choice questions that pupils can practise anywhere, on the bus, in the playground, at home, until they memorise the answers – what Mr Black terms "drill and kill".

A wide range of educational software, including language learning software, is now available for handheld gaming devices like the Nintendo DS, of which there are now five million in the UK.

"The limitation on handheld learning devices is governed more by what the learners use them for than the devices themselves," Mr Cook added.

"MP3 recorders and players and iPods are increasingly used by students of modern languages – for tutors to record classes or for pupils to access native-language resources, such as radio stations, and for pupils to record their own work and produce their own content.

Mr Black added: "Today’s young people are both producers and consumers of content in a way that was not possible five years ago."

Mr Sugden, meanwhile, reckons that blogging may become more prevalent in schools and can be a useful tool for reflection if carried out under the auspices of the school. He said: "Blogging can help pupils reflect, to put forward their opinion, and to see other points of view. Blogs are a useful way to develop communities of practice."

Many teachers are keen to use these devices but often students are the experts and are already motivated to use them and to experiment with them.

"Many pupils see mobile phones and personal digital assistants as ‘their’ territory and are spearheading their use," Mr Cook said. "They use Bluetooth and send MP3 files as a normal part of their everyday lives outside school and want to bring this to the classroom." Mr Black urges teachers to work collaboratively with pupils to tap into this enthusiasm.

Questioned over whether some pupils will miss out on technology due to lack of parent funding,
Mr Black says that the digital divide in education is not as simple as the "haves" and "have nots". Analysis of technological adoption shows that some deprived wards in the country have higher access to satellite television than they do to conventional phones. Equally, it does not always follow that those who own the best mobile phones are from the better off families, but it is still an issue that should concern us.

Seb Schmoller is the chief executive of the Association for Learning Technology. Visit www.alt.ac.uk