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Medical Education @ Cardiff

Use Mobile Devices in Medical Education

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Rapid developments in technology enhanced learning, coupled with evolving learner behaviours, require organisations to continuously evaluate their approaches to teaching & learning in both the workplace and virtual environments. The availability of low cost devices, supporting infrastructure, and enthusiastic engagement of the userbase with technology that supports their needs, provides an evolving imperative which informs new ways of teaching & learning.

The challenge is, how do we in the clinical context, harness the energy and facility which the mobile devices 'network' provides, not just to deliver education and training, but provide new ways of working, to enhance provision and support the aim of 'safer doctors', 'safer patients'.

Why use a mobile device

- ▶ It is widely recognised in education contexts that using mobile networks to which learner groups are dedicated brings substantial benefits in terms of engagement and communication efficiency. It is a natural progression for trainees to continue learning using technology and associated methods to which they have become accustomed through school and university.
- ▶ WiFi access to internet has improved greatly, and is becoming a standard.
- ▶ A properly resourced mobile device contributes to a richer experiential learning environment and provides immediate access to just in time contextualised searching and learning. It can provide another valuable teaching aid to support the objectives of your teaching session or point. It is easy, quick and bookmarkable for future reference. Additionally, if the information is actually held on the device as in the context of the iDOC⁴ project, access is fast.
- ▶ Many organisations are now providing resources of many kinds in electronic form.^{3,4,6,7,8,14,15} Medical and Dental education and training needs to ensure it continues to embrace the benefits of the online context in order to optimise learning experiences for trainees. The Deanery iDoc⁴ Project facilitates focused learning in this way, by providing just-in-time, at the bedside access to up to date, reliable medical information. iDoc has been shown to enhance patient care.

- ▶ A mobile device can make contributions to learning in a number of different ways which may suit the individual learning preferences of trainees.

What mobile device?

For the purposes of supporting learning in the workplace, a mobile device must have the capability to browse web based media. For preference such media is best stored internally on a memory card; an earphone socket for private listening is also an essential component. The physical size of the device may or may not be a constraint, but needs to be considered. Most modern smartphone devices have these features as standard.

As mobile networks and associated infrastructure become upgraded to 4G¹ and subsequent levels, standardisation will mean that it will become increasingly easy to deliver media using these devices. It is however best to use devices by connecting to institutional I.T. networks which provide the EDUROAM Service² or open access WiFi; this avoids personal network costs to users.

Principles of use of mobile device in the workplace

- ▶ Using mobile devices to enhance training is an important and substantial aid. Be an advocate of use of mobile devices - a supportive consultant/ senior who welcomes use within the boundaries set.
- ▶ Set boundaries around the ways and times at which devices may be used (mobiquote) -e.g. no personal messaging, personal browsing, taking personal phone calls etc.
- ▶ Set aims and objectives⁵ for teaching, and target appropriate web resources.
- ▶ Recognising that google turns up many sound and unsound resources – how do you pick what's valid?

- ▶ Foster a collaborative context – you can share what you’ve found with colleagues.
- ▶ Mobile devices should complement and signpost other important learning environments such as learning@NHSWales⁹ and the University’s Learning Central service.¹³
- ▶ A mobile device complements other learning methods which you may use, it does not replace them. The technology is there to support learning.

How to get the best out of a mobile device

The challenge is to ensure a valid, up to date and quality controlled resource set and critical appraisal of information in the online context. A way forward here might be to share and discuss the acquired resources in team meetings and gain the opinion of the lead consultant. Some resources will be quality assured, such as those from royal college sources and the iDoc project.

Trainers – collect the mobile numbers of the trainees in your team, use text to communicate. Encourage trainees to contribute and to use their devices when appropriate. Try to set your team’s learning resources up in a mobile friendly learning environment such as Learning@NHSWales⁹ or learning Central¹³, encourage trainees to access them. If your teaching objective (ward or classroom based) is supported by your online resource set, you can direct trainees to the resource which may include a collaborative activity in which they engage using a forum perhaps. As a consultant you may lead the forum discussion over a period of a few days, then follow up face to face with the group or individual trainee. You may wish to investigate twitter¹⁰ within the terms and conditions of use in your Local Health Board and use this service with your trainees.

Trainees - Finding good quality resources is a challenge, so ask your Consultant for bookmarks. You may wish to lead the way and set up a section on the Learning@nhsWales server⁹, to host a valued resource set and associated learning activities in collaboration with your lead consultant. This route allows you to easily share, manage, tailor and quality assure your learning support services. Get the mobile numbers of trainees in your team, share any new resources with your Consultant for quality assurance, then share once approved.

Work with Deanery or Local Health Board education specialists to get things set up in an educationally sound way. Content can be gleaned from a number of sources such as BMJ Learning³, Royal Colleges⁶, Doctors.org.uk¹¹, iDoc Project⁴, iPhone apps, iTunes-U¹², Youtube etc.

Conclusions

Mobile devices are very widely used by health professionals. Widespread ownership of these devices provides a unique opportunity, which can be harnessed to enhance education and training.

There is likely to be an expectation amongst device owners that they will be utilised to enhance teaching, learning, communication and collaboration.

The iDoc project provides a unique opportunity to use a focused resource set to facilitate engagement in a quality assured context. There are many other electronic resources which can be used to enhance teaching and learning further.

Using mobile devices in this way facilitates teaching and learning at a pace, place and time of the participants’ choosing.

References

- 1 4G will be rolled out to 95% of the UK by end of 2016. 3G is currently rolled out to 98% of the UK as of May 2014
- 2 EDUROAM provides access to the University Internet service which is available to trainee doctors and Education Supervisors in Wales, in participating LHBs. Check your device on location for availability.
- 3 BMJ Learning [Learning.bmj.com](http://learning.bmj.com)
- 4 iDoc Project <http://idoc.walesdeanery.org/>
- 5 Help for writing learning objectives <http://www.naacs.org/docs/announcement/writing-objectives.pdf>
- 6 Royal College of Physicians e-resources <https://www.rcplondon.ac.uk/cpd/clinical-cpd/e-learning-clinical/e-resources-clinical>
- 7 Dentistry and e-learning for healthcare <http://www.e-lfh.org.uk/programmes/dentistry/>
- 8 iMedical Apps <http://www.imedicalapps.com/>
- 9 NHS Wales Learning Portal <http://learning.wales.nhs.uk/>
- 10 Twitter <https://twitter.com/>
- 11 Doctors.org.uk <http://www.doctors.net.uk/>
- 12 iTunes-U <https://www.apple.com/uk/education/ipad/itunes-u/>
- 13 Learning Central <http://www.cardiff.ac.uk/insrv/educationandtraining/elearning/blackboard/>
- 14 Medical Apps <http://www.imedicalapps.com/2011/01/top-free-android-medical-apps-healthcare-professionals/>
- 15 Eye Diagnostic tool <http://www.examiner.com/article/perfectsight-netra-turns-droid-iphone-into-eye-diagnostic-tool>

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