Implementing mobile learning with iPads in Higher Education: A large scale case study

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Context

• Geographically distributed student cohort
  • 1500 students across years 3-5
  • Based at 4 Teaching hospitals with placements across 15 further District General Hospitals
• Widely differing experiences and access to resources
• Unify the learning experience and access to technology
The case for m-learning

• More cohesive MMS curriculum delivery to facilitate learning irrespective of location

• Implemented a tablet m-learning solution
Key considerations

• Which device?

• How to configure the security of these devices within clinical environments?

• How to best develop learning packages to support curricular content?

• How to facilitate m-learning with internet access across multiple NHS sites?

• How to establish support for students; faculty and the NHS partners?
Which device?

- Portability
- Availability
- Reliability
- Security
Security

- Devices configured using the 'Profile Manager' tool within Apple's Lion Server
- Tablets can be remotely ‘wiped’ and are encrypted with a passcode to prevent unauthorised access
- Students are reminded about the need for patient confidentiality
- NEVER store sensitive data on the Cloud
- Code of Conduct
- Student Agreement on receipt of tablet
Learning materials

- >150 purpose-built m-learning packages
  - Riverside authoring tool -> Wordpress
  - cross-platform accessibility – not exclusive to iPads

- Video library – lectures downloadable for offline viewing

- iBooks: Neurological signs; Prescribing handbooks; Assessments & examinations guide

- Library resources and reference materials e.g. BMJ Best Practice
Wi-Fi: Pre iPad project

Hospital Wi-Fi
December 2011

Legend:
- Red: No coverage
- Yellow: Limited coverage
- Green: Full coverage
Wi-Fi: Post iPad project

Hospital Wi-Fi
July 2013
Post iPad project

Legend:
- Red: No coverage
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Ongoing support

- Technical: Faculty IT technician 0.5 day/week
- Peer:
  - student resources
  - iPad gurus
- Tutor seminars
Advantages

- Through the provision of learning materials & Wi-Fi -> Facilitation of m-learning
- Improved communication – ‘push’ central notifications; download resources etc. through webclips
- Easier data collection – UoM eForms software
  - compulsory workplace assessments
  - research data
  - admissions process

Disadvantages

- Cost of the devices
- Initial time taken refining configuration (now up to 30 devices/day)
Insights

• We have introduced a ‘disruptive technology’
• We need to understand the way students use tablets to learn
• Digital literacy and digital professionalism integral
• Remember the tutors

“I'm finding it the most useful in the gaps between teaching sessions. Reading through this week’s PBL notes or adding to a patient log is very convenient - not to mention how much more organised I can be now with the calendar.”

Medical Student
Measuring impact

• Multidisciplinary mTech Research Group

• To explore, innovate and optimise:
  • learning and teaching
  • user experience to provide a unified, satisfying learning experience for students and faculty

• Derive sharable standards to guide the integration and optimal use of mobile technologies for medical learning
Current projects

- How are students evaluating the reliability of web resources?
- Are iPads being used as a transactive memory store?
- How are iPads used in small group tutorials?
- What are tutor perceptions of iPads?
- iPad cohort study – following tablet users beyond graduation
- Tablets and the flipped classroom – looking to improve technology integration into curriculum delivery
In summary

• Significant barriers have been addressed through this implementation:
  • variable Wi-Fi access across NHS institutions – this took time to improve
  • the provision of mobile device ready learning resources
  • boundaries regarding digital professionalism had to be set with the students

• FMHS IT Services set-up and ongoing support is essential to this project’s success

• We are learning from the students’ use of these devices and conducting ongoing investigations into optimising tablet integration in curriculum delivery
http://mhsme.manchester.ac.uk