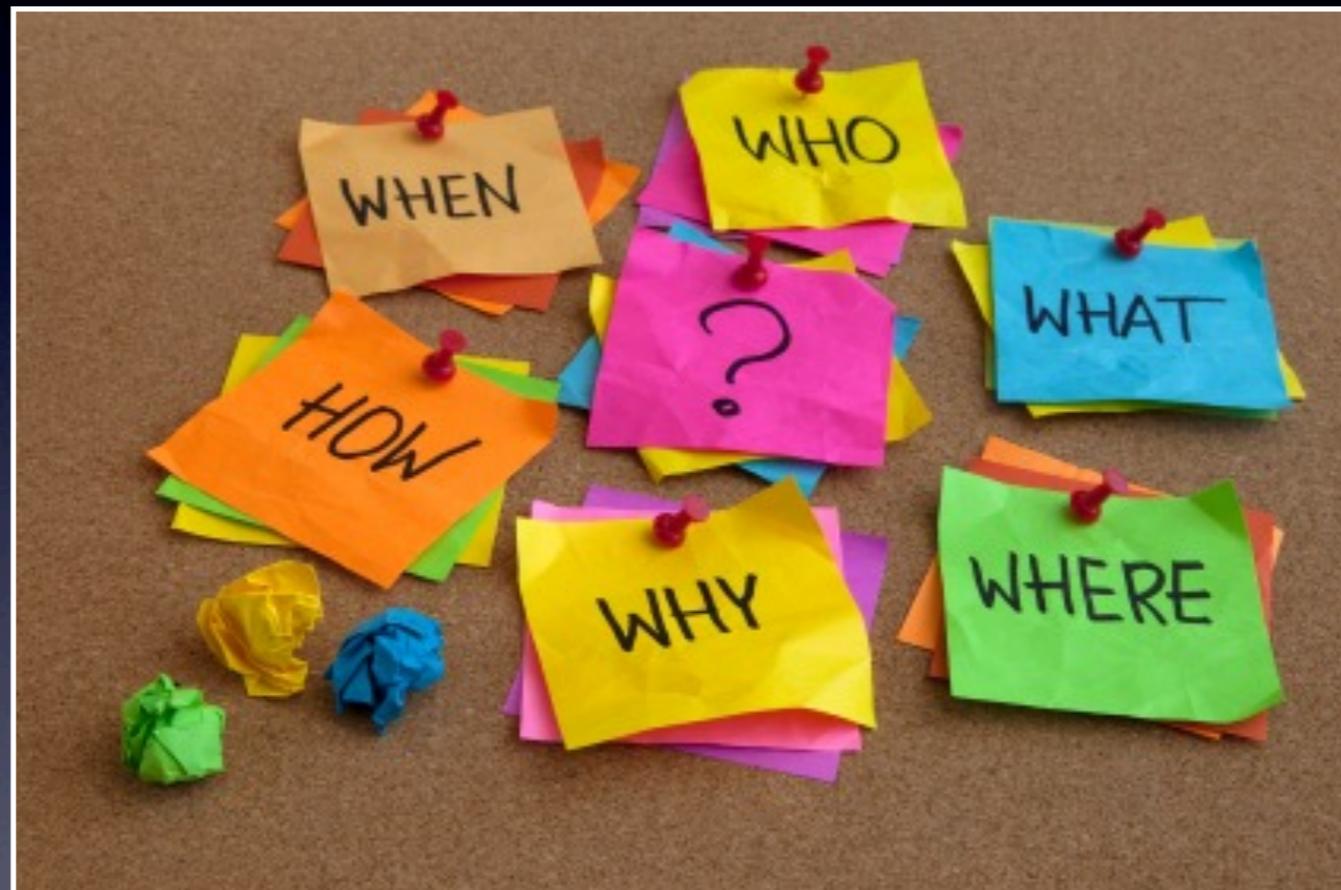


iPads and mlearning at Manchester Medical School

Dr Colin J Lumsden
Academic Lead for e-learning
Senior Teaching Fellow
University of Manchester

iPad Pilot Project 2011/12

- 457 Students in Year 4 of the MBChB + 250 Dentistry (3G iPads)
- 16GB WiFi Only iPad 2's
- No tutor iPads were distributed
- ~ 1100 iPads to Years 3 and 4 MBChB 2012



Why?

- Students distributed across a wide geographical area
- Widely differing experiences and access to resources
- Poor student feedback in NSS
- Harmonisation of experience and access to technology

Why iPads?

- Portability
- Availability
- Reliability
- Security



How?

- Loaned iPads
- Replacement policy
- End of project - Purchase option
- 2 stolen (abroad) 8 broken (screen damage)



Encryption and Security

MDM Software allows configuration so that:

- All data is encrypted
- Requires alphanumeric passcode
- Minimum passcode length
- 5 min before auto-lock
- Maximum number of failed attempts
- Data can be remotely wiped

Connectivity in the NHS



Hospital	WiFi Dec 2011	WiFi Nov 2012
MRI*	Red	Green
North Manchester	Red	Green
Oldham	Red	Green
Tameside	Red	Green
Rhyl Hospital	Yellow	Green
Wrexham Hospital	Red	Green
Noble's Isle of Man	Green	Green
Christies	Green	Green
Hope Hospital*	Red	Green
Royal Albert Edward	Red	Green
Wythenshawe*	Green	Green
Leighton	Yellow	Green
Macclesfield	Red	Green
Stepping Hill	Red	Green
Preston Royal*	Green	Green
Blackburn Royal	Red	Red
Chorley Hospital	Yellow	Green
Royal Bolton Hospital	Yellow	Green
Burnley Hospital	Red	Red

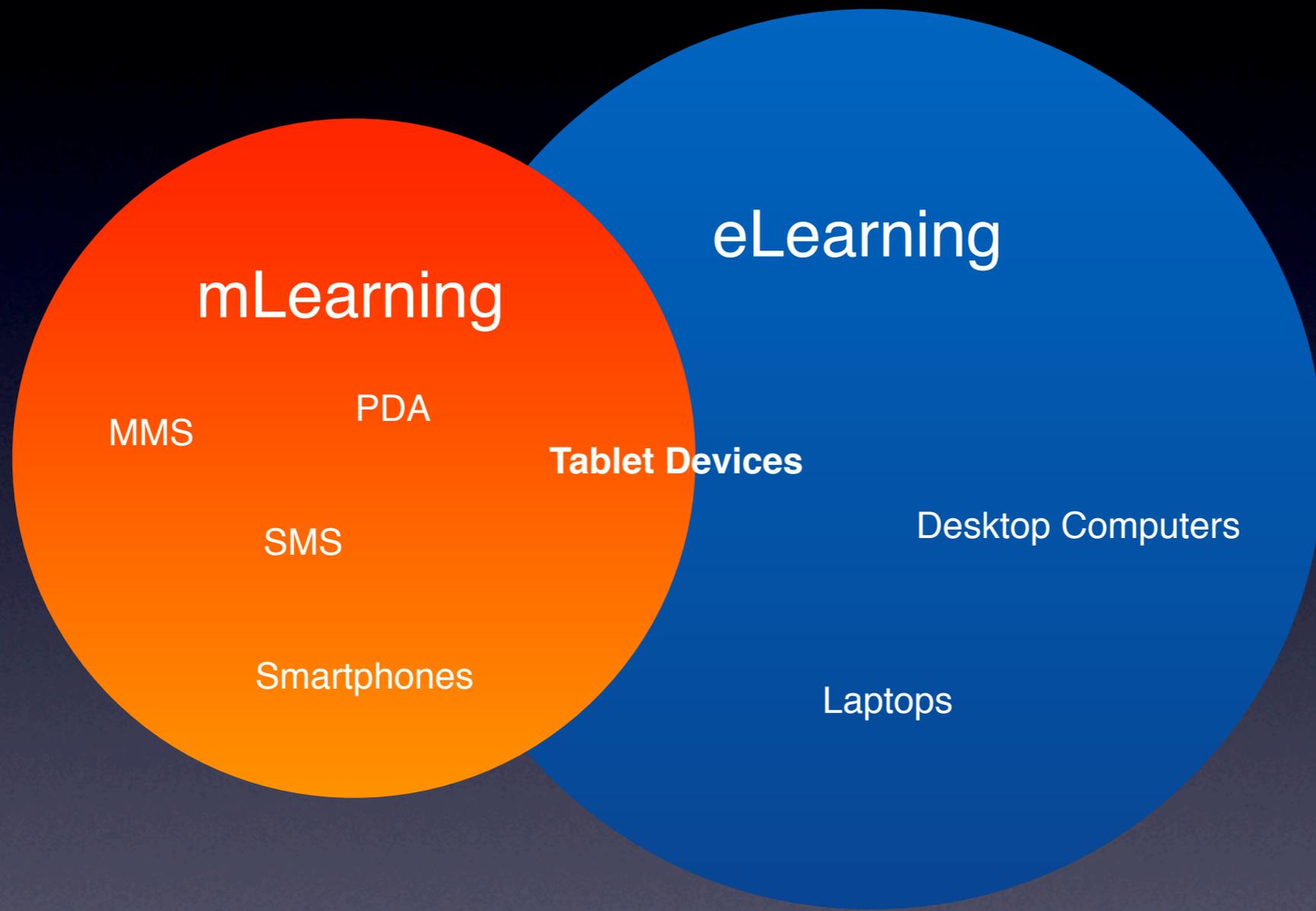
mLearning: a definition

“Any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies”

Clinical years

- Experiential learning
- Opportunistic
- Unstructured
- Distributed





Why m-learning?

- Blended learning
- “just-in-time” learning
- Learning in the workplace
- Supporting learning rather than being integral to it
- Re-engages students

Evaluation Data

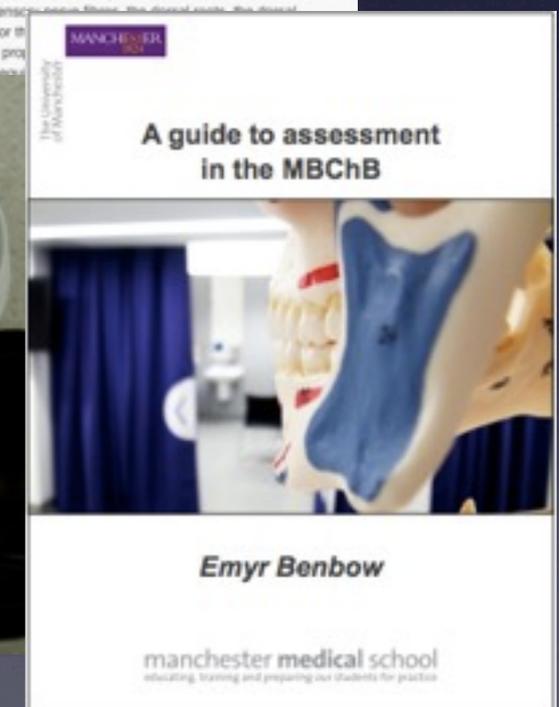
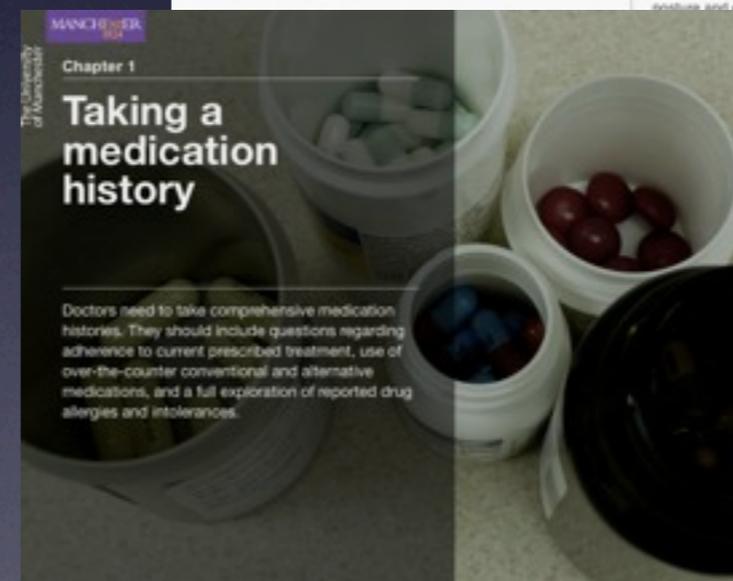
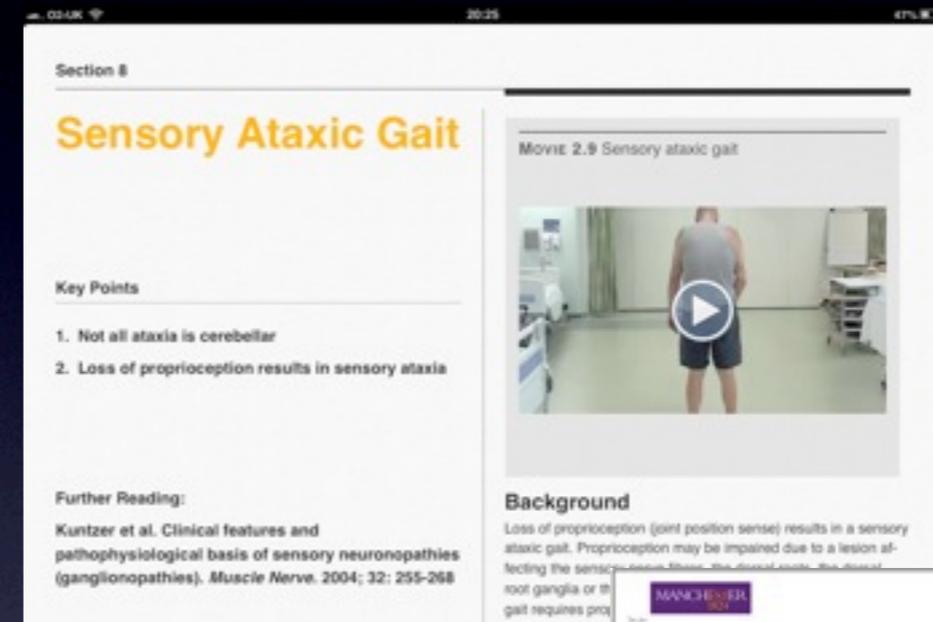
- 88% : improved learning experience
- 85% : Positively affected learning
- 78% : Make use of time previously wasted
- 90% : Easy to use and intuitive
- 80% : Developing new ways of learning
- 65% : Printing less



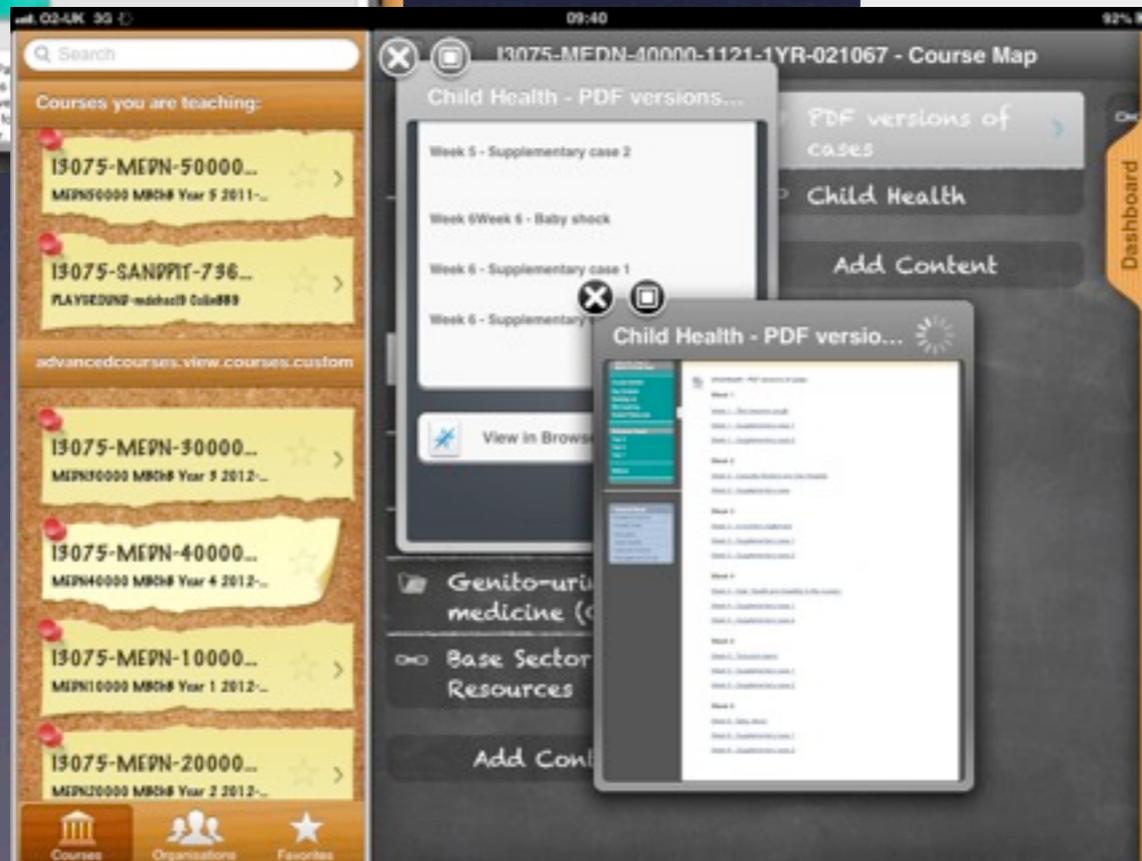
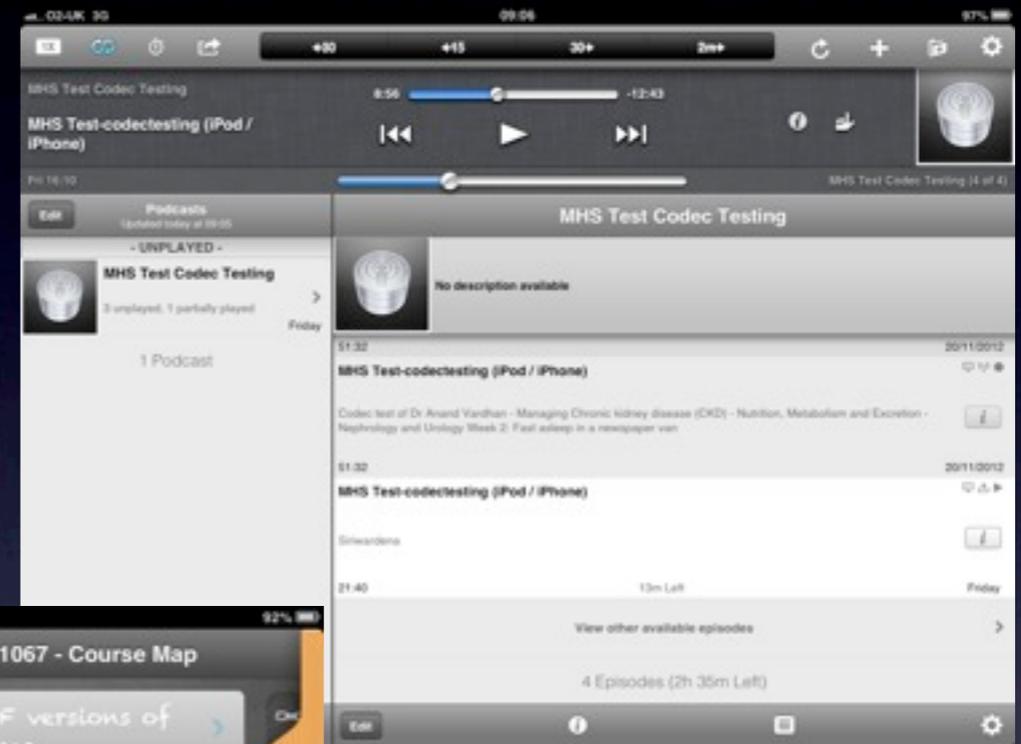
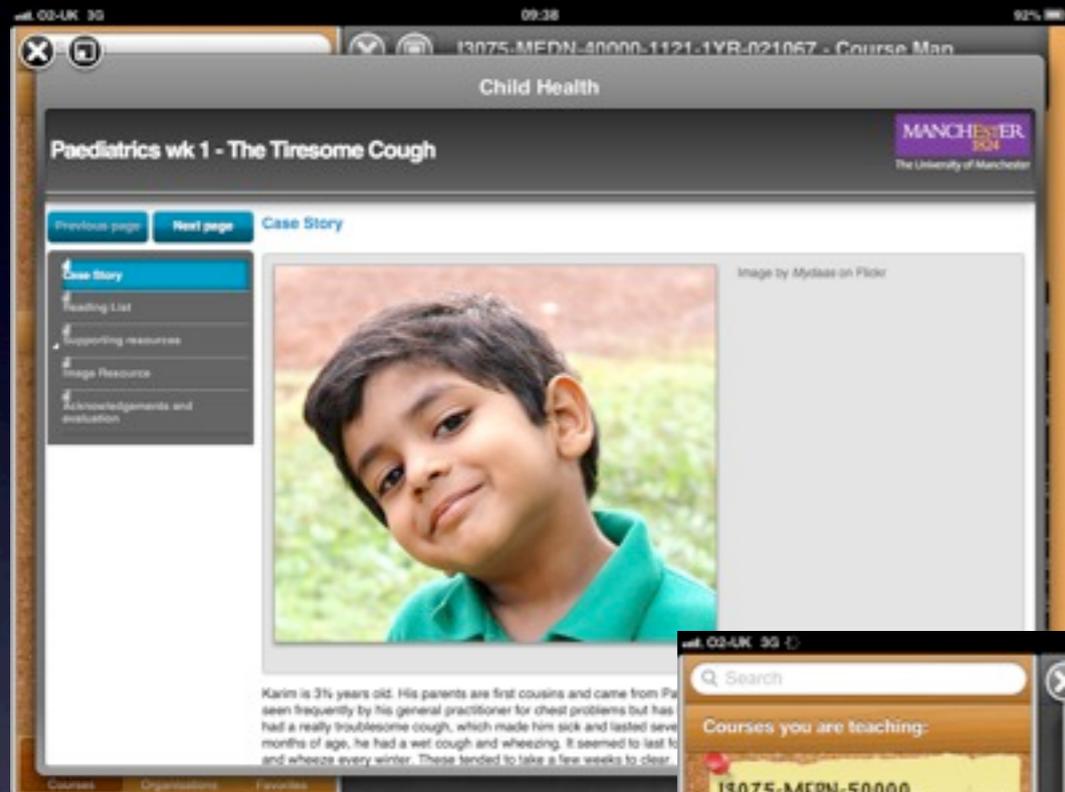
Student iPad Demos

iBooks

- Course Handbooks
- Module Handbooks
- Prescribing skills and formulary
- iTunesU



Course Materials



Teaching and learning

M&M: Mind and Movement: Community Tasks

Orthopaedics

- Acute fractures: White Van Man
The patient is unable to work and requests a further month off work, you review him at home, referring to appropriate guidance complete the attached Fit Note PDF using your preferred app.
- FP10
- Statement of Fitness for Work

Back Pain: Bearing The Burden
Review the two MRI spine scan reports: what action would you take?
Review the 'back pain' bone scan: What other investigations may have been abno...

- FP10
- Back Pain bone scan
- MRI scan spine 1
- MR scan spine 2
- Ankylosing Spondylosis part 1
- Ankylosing Spondylosis part 2

Psychiatry

- Dementia
You should understand and could discuss with your tutor assessing capacity and power of attorney
What support is available to patients and their families in the community?

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preview mode

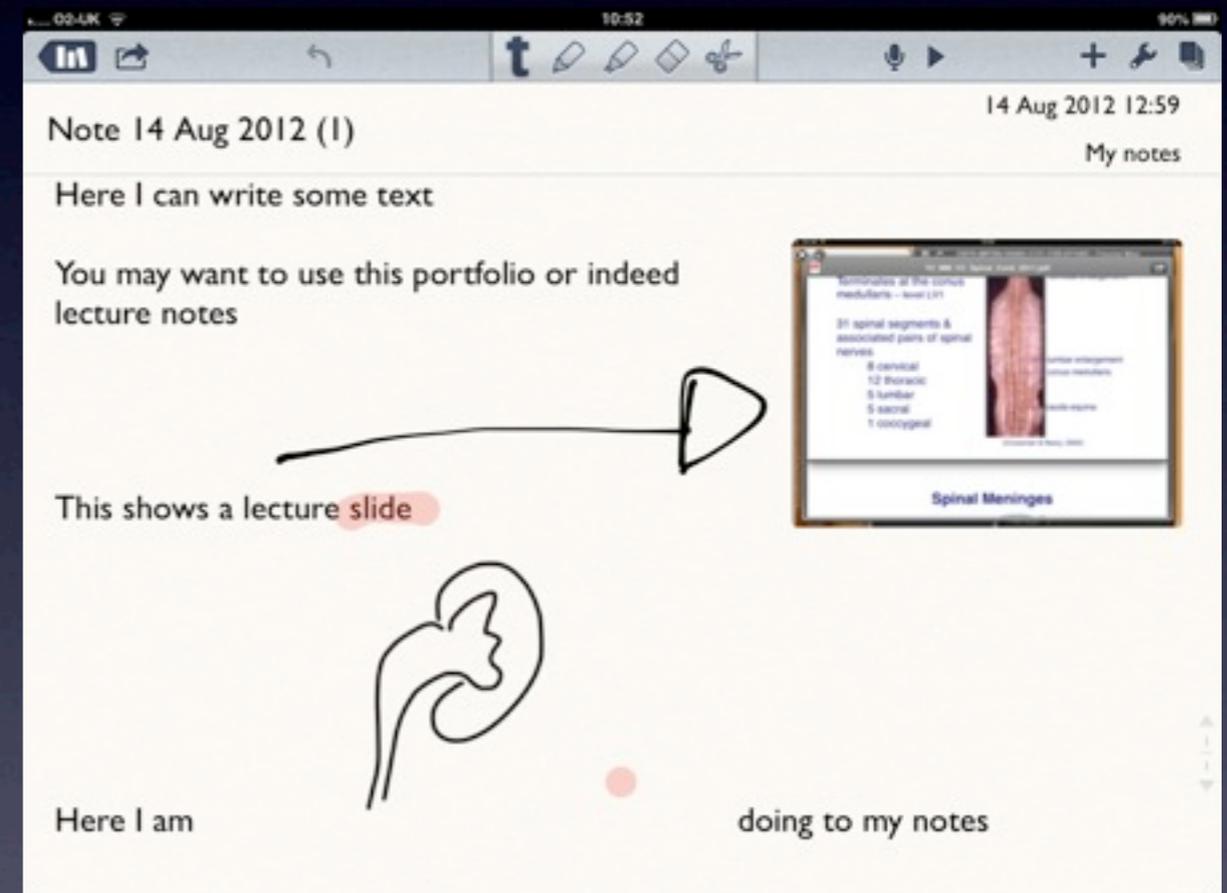
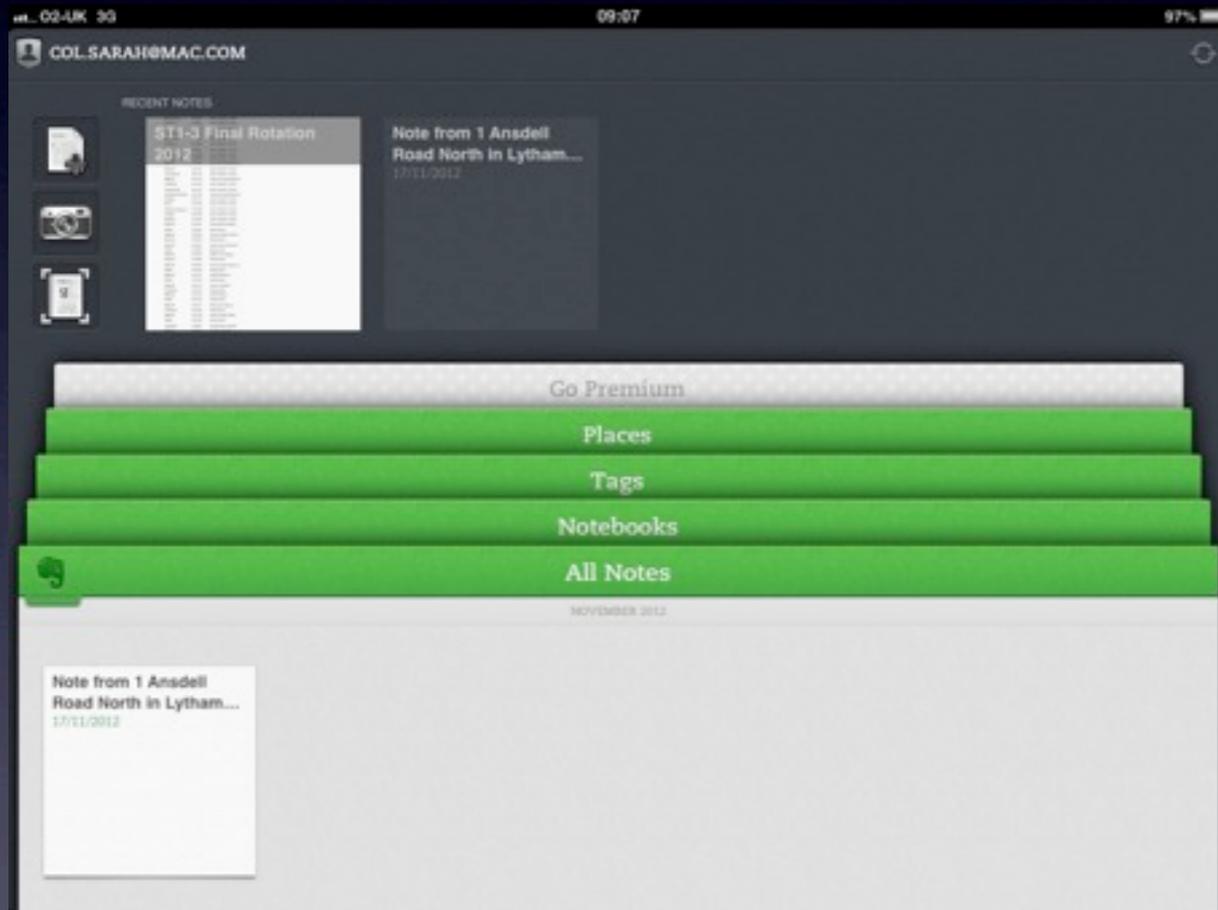
How have you found out about useful apps and learning resources?

Source	Percentage
From the iPad website	34.3%
From other students	85.8%
From internet searches	56.0%

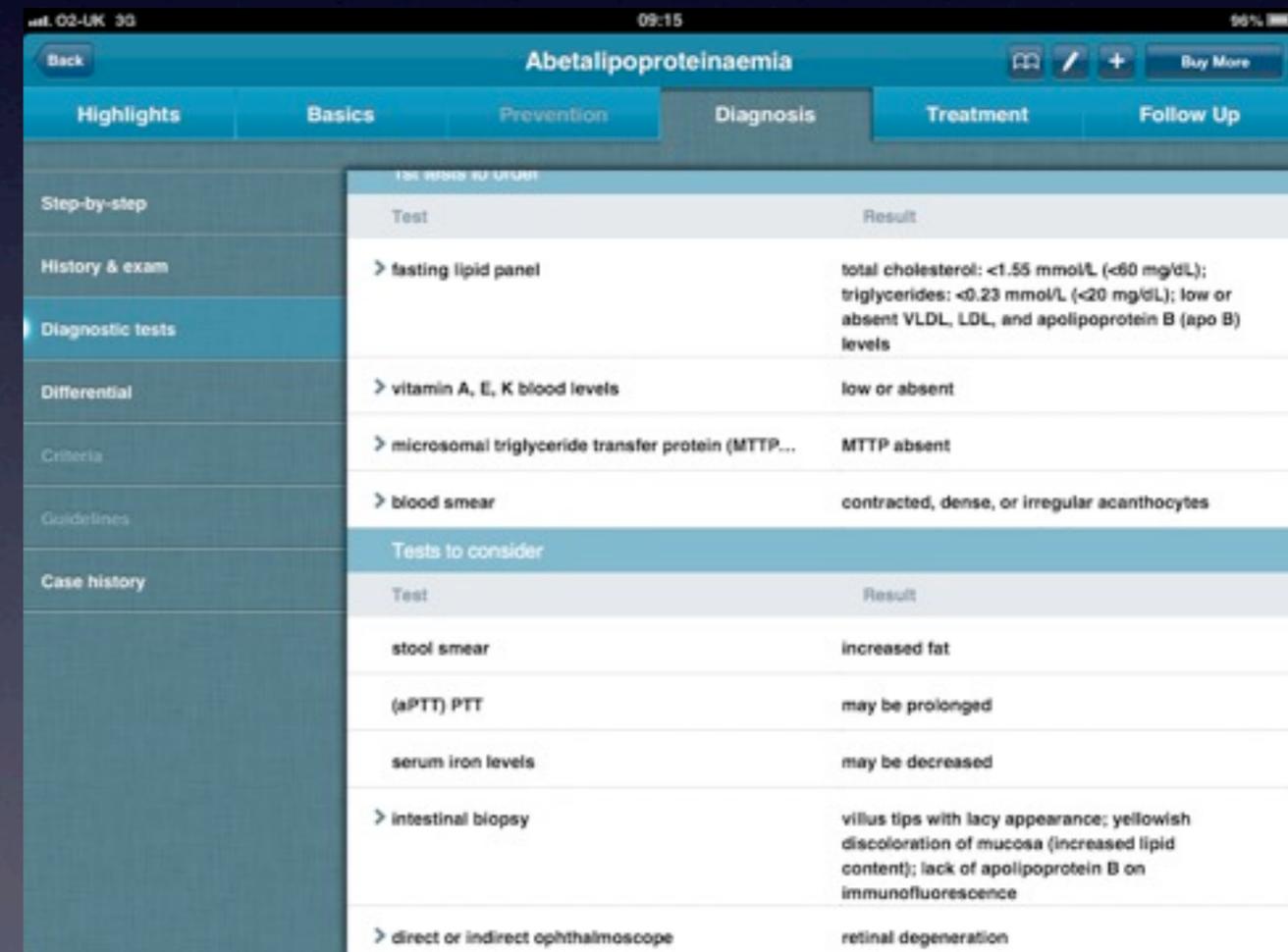
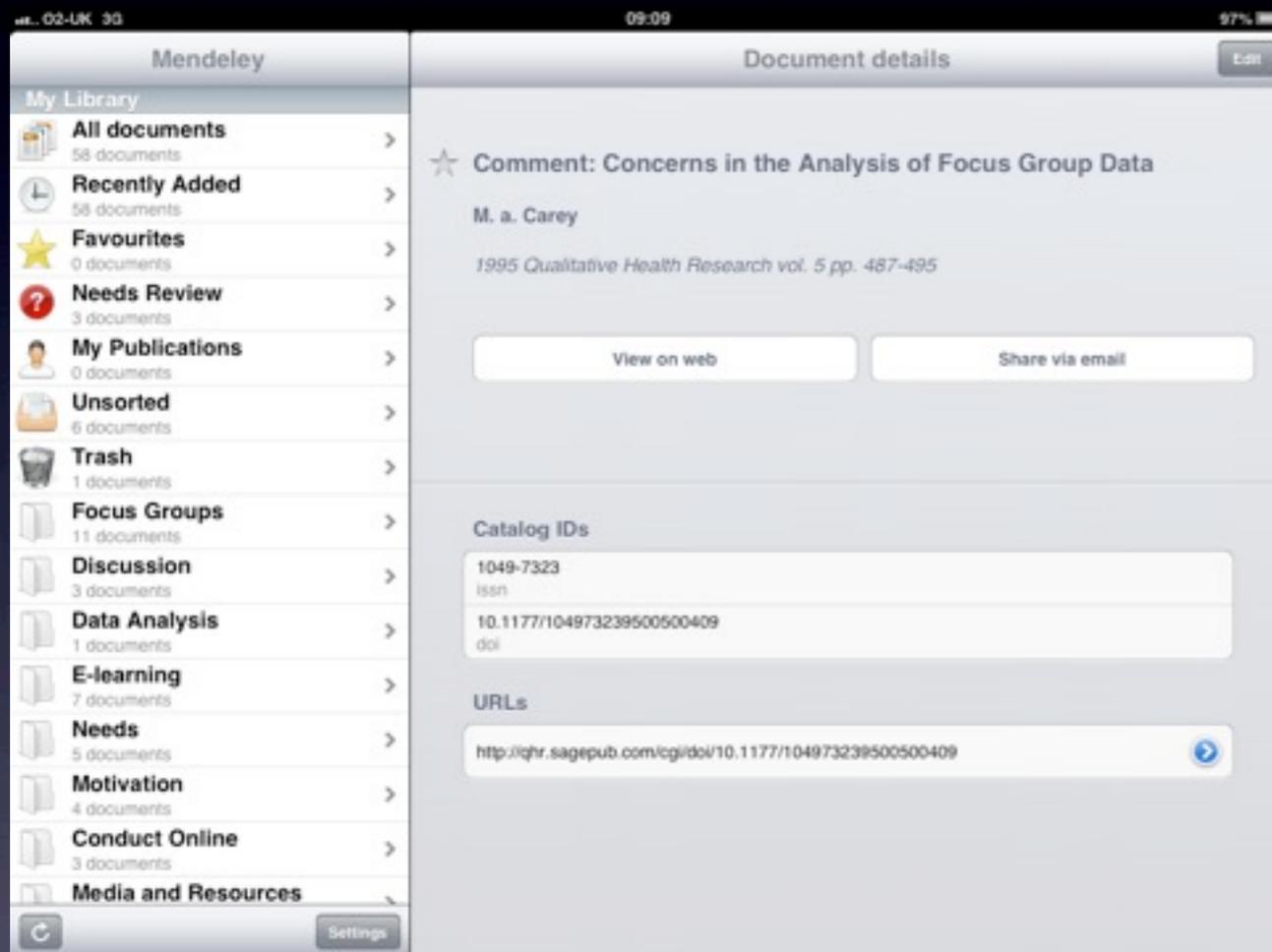
apps

What every

Note-taking and Portfolio



Reference Materials



Spreadsheets

- Clinical Skills Logbooks
- Patient Logs
- Audit
- Research
- VPP

Blank

Patient Log Paediatric Patient Log Paediatric Skills Summ... Obs & Dynam Skills Sum... Table 1

Observation of children of different age groups	Date	Time	Location	Developmental assessment	Parental involvement
2 weeks - 4 weeks					
4 weeks - 1yr					
1yr - 2yr					
2yr - 3yr					
3yr - 4yr					
4yr - 5yr					
5yr - 6yr					
6yr - 7yr					
7yr - 8yr					
8yr - 9yr					
9yr - 10yr					
10yr - 11yr					
11yr - 12yr					
12yr - 13yr					
13yr - 14yr					
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92yr - 93yr					
93yr - 94yr					
94yr - 95yr					
95yr - 96yr					
96yr - 97yr					
97yr - 98yr					
98yr - 99yr					
99yr - 100yr					

Skills eLog - version 1.0 iPad Final

Arterial Injection Venous Cannulation Venous Cannulation Intravenous Infusion Administering Oxygen

Venous Cannulation	1	2	3	4	5	6	7	8	9	10
Date										
U - Self Assessment, P - Peer Assessment, O - Observer Assessment, T - Tutor Assessment										
Patient - OP simulated patient, NP real patient										
WOT7 group including all required equipment in a clean room										
Wash your hands										
Apply the tourniquet										
Palpate the vein										
Release the tourniquet										
Clean the site over the vein with appropriate swab										
Wash hands and don non-sterile gloves										
Re-apply tourniquet - do not palpate										
Tether the skin with your non-dominant hand below insertion site										
Insert the needle at an angle of 10-45° to the skin (this will depend on vein depth)										
Observe for blood in the flashback chamber										
Lower the angle and advance 2mm, pull back on needle slightly observing for secondary flashback										
Identify advance the cannula over the needle										
Release of safety of flashback										
Release the tourniquet										
Fix the cannula using dressing, tape & force of insertion										
Flush cannula using 10ml NaCl										
Commence intravenous pathway										
Score/10	0	0	0	0	0	0	0	0	0	0
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

© Cumulation

Communications



Supervision

- More evidence to support supervision
- Flexibility in support
- Custom ePortfolio



Course Management

- Feedback
- OSCE Marking and feedback
- Year 5 Student Assistantships
- UPSA assessments
- Placement evaluations

eForms

- Web based form authoring
- Forms organised and distributed by groups

The screenshot shows a mobile application interface for a 'Hospital Placement Evaluation Form'. The interface is split into two main sections: a left-hand 'Sections' menu and a main form area.

Sections Menu (Left):

- Clinical Placement Evaluation Form
- Induction
- Clinical Experience and Practice
- Placement Supervision
- General

Main Form Area (Right):

- Header:** 'Hospital Placement Evaluation Form' with a 'Done' button.
- Logo:** The University of Manchester logo (MANCHESTER 1824).
- Text:** 'Please take a few moments to complete this placement evaluation form regarding the placement you have recently finished. Any data that is fed back to placement providers will not contain your name. Your feedback is important to us. Thank you for taking the time to complete this questionnaire.'
- Image:** A photograph of a hospital corridor with the number '102' on a door.
- Form Fields:**
 - Sector *:** 'Please select your sector' with a 'Choose...' button.
 - Module *:** 'Please select your module' with a 'Choose...' button.
 - Placement Code *:** 'Please enter the placement code you were given for this placement block.' with a text input field.
- Section Header:** 'Typical Working Week'.
- Text:** 'Please describe how you spent a typical week on placement. This might be time in the ward,'

“I'm finding it the most useful in the gaps between teaching sessions. Reading through this weeks 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”

“I've been using the ipad on the bus, train and in between. It's been hugely useful so far. It takes me about 1.5 hours to get to hospital, so I can't imagine going without!”

“the iPad and apps are very helpful and advanced. Congratulations. I'm proud to tell people that MMS is giving us iPads and creating apps for us to study with”

You don't understand
what an iPad is for until
you have one!

It's not about the
technology!

Productivity appears to be
the single biggest gain seen

Digital natives don't
exist ... yet?

Research Questions

- How do students construct learning in the mobile environment?
- What part do tablets play in facilitating this and how does it link into their current learning practices?
- What part does social media play in learning?

Research Questions

- Are we narrowing or widening the digital divide?
- How do mobile technologies affect examination performance?
- Do we need to modify our curriculum to meet the needs of students with mobile devices?
- Will this project produce better doctors?

Questions?