





Mobile is here

- >4.6 billion users worldwide
- Always-on, always-with-me
- Phone ⇒ computer
- Numerous uses in m-health, m-libraries, m-learning...





Choosing Healthy Eating when Really Young

Do you have a child aged 18 months to 5 years?
Is your child a fussy eater?

Would you like to know more about healthy eating
for you and your family?

Do you want to have a go at some new recipes and
try new foods in a relaxed environment?

**Come along to
CHERRY!**

A free programme for parents and children under 5

Liskeard Children's Centre, Varley Lane
Mondays 1-3 pm or Tuesdays 9.30-11.30 am
St Martin's Church Hall, Church Street
Wednesdays 9.30-11.30 am
Four sessions per family, starting in November

Text Cherry2 to 60777
if you are interested in taking part

Find us on
Facebook

UCL

Participant recruitment

- Make it easy for prospective participants to contact you
- Use a 'short code', e.g. "Text CHERRY to 60777"

UCL

How have other technological innovations fared...?

Electronic health records

NHS Connecting for Health

Biggest civilian IT project in the world ever; many successes, however...

"Seven years after the launch of the National Programme for IT in the NHS, **essential technology does not meet the needs** of doctors, local cost estimates are unreliable, many NHS staff remain unenthusiastic, and the programme's future is far from certain."

"The **delays** are despite the programme's having spent £2.4bn by March 2007"

"**few successful deployments** of the scheme's two main hospital systems [...]"



"An NHS trust at the forefront of work on the £12.7bn NHS IT scheme has called in police after a breach of smartcard security **compromised the confidentiality** of hundreds of electronic records."

Principles to support technology innovation?

- Involve users in design
- Allow co-evolution of technology and usage
- Recognise issues with top-down and bottom-up approaches (middle-out?)
- Address the complexity of work practices
- Address organisational issues
- Get the infrastructure right
- Technology push v. user pull

In electronic health records: Greenhalgh, Potts *et al.*, *Milbank Quarterly* 2009, 87(4):729-88

"if you think IT is the solution to your problem, then you don't understand IT, and you don't understand your problem either."

Roger Needham, CBE

Y r u obsessed w apps? :-)

- Don't overlook SMS (text) & interactive voice response
- Near universal coverage; no fragmentation
- UK
 - 62M population, 82M mobile phone subscriptions, 25M smartphones, 40% smartphone penetration
- India
 - 1220M population, 973M mobile phone subscriptions, 33M smartphones, 3% smartphone penetration

Make it easy-to-use

The screenshot shows the SurveyMonkey website interface. At the top, there's a navigation bar with 'Home', 'Take a Tour', 'Resources', and 'Plans & Pricing'. A sidebar on the left lists 'Creating a Survey' steps: Getting Started, Question Types, Survey Templates, Customization, Response Validation, Skip Logic, Printable PDFs, Get Responses, Analyze Results, and Use Cases. The main content area has a heading 'We did the work so you don't have to.' followed by three survey examples: 'Overall, how would you rate this employee?', 'How satisfied are you with the product?', and 'How likely are you to recommend our service to a friend?'. Each example shows a list of response options with radio buttons. To the right, a 'Get Started Today!' box promotes 'PRO Plans' (Advanced features & customization for power users) and 'BASIC Plan' (All the essentials to get you started for FREE).

Make it easy-to-use

The screenshot shows a Moodle course page for 'Research Methods in Healthcare 2011-12'. The page is titled 'Research Methods in Healthcare' and is viewed by user 'Henry W. W. Potts'. The main content area is titled '1 Introduction' and contains the following text:

This module is about research and evaluation methods and I'm your Module Tutor, Dr Henry Potts (pictured right, although I have more beard at the moment). In this module, you will learn how to design research studies and evaluations yourself, and how to critically appraise other people's studies. Your assignment entails you designing a study yourself: you will write a research protocol for a useful and feasible study in health informatics of your choice. (Don't worry: you don't actually have to carry out the research.)

We will be focusing on the research methods particularly used in the field of health informatics. However, there is considerable overlap with methods used in health services research and in medicine generally.

The module handbook lays out what we cover in this module and includes reading lists for each topic. It also has details on the assignment.

Broadly speaking, I expect each topic to take about a week. However, I understand that you may not keep exactly to that schedule. If you are having significant problems keeping up with the material, contact me or your personal tutor. At the beginning, only the initial topics are shown, but further topics will be revealed as time progresses.

Module topic details

To start, I have two tasks for you. First, go to the forum and introduce yourself and your experiences of research. Secondly, pick your example papers within your groups. Detailed instructions below.

The page also features a sidebar with 'Latest News', 'Recent Activity', 'People', and 'Administration' sections. A 'Section Links' sidebar on the right includes 'News forum', 'Module handbook', and 'Module forum'. A 'Library Search' sidebar is also present.

The screenshot shows a Moodle course page for 'Research Methods in Healthcare' displaying a lesson plan. The page is titled 'Levels of measurement lesson' and contains the following text:

Now we'll consider how to summarise and describe quantitative data. Read the lesson available as a PDF. (Handling qualitative data will come later.) There is also a short quiz where you can test yourself. Remember the module handbook also has a full reading list.

Descriptive statistics lesson

Levels of measurement quiz

The descriptive statistics lesson introduced the concept of variance. This website graphically illustrates how the variance is calculated.

Animated illustration of variance

Look at the research paper you selected previously and post a description of what quantitative analysis it uses (if any) to the forum.

MIT have a set of lecture notes if you want to read more about statistics. These go into much more detail, but are there if you want to sample them.

MIT OpenCourseWare Statistical Methods

3 Sampling

In this block (starting 14 March), we are considering how to obtain a sample of participants for a research project. Start by reading the PDF I've written on the topic. You may then want to read further on the topic (see module handbook for reading list).

There are two exercises here. Firstly, I'd like you all to contribute to a wiki on enhancing response rate. Secondly, in the overall module forum, describe the sampling methods used in the papers you selected previously.

Sampling methods

Enhancing response rate

Look at the studies you've selected previously. What sampling methods have they used? Were they random? Are there any obvious biases? Do they report a response rate? Write up your conclusions (you may want to do this as a group first) and post them to the module forum.

4 Face-to-face week

The page also features a sidebar with 'Latest News', 'Recent Activity', 'People', and 'Administration' sections. A 'Section Links' sidebar on the right includes 'News forum', 'Module handbook', and 'Module forum'. A 'Library Search' sidebar is also present.

Money

- Unlike Internet, most mobile activities have to be paid for
- What does the end user pay? What does the institution pay?
- Long tail of usage



Guess the date

Advert in California newspaper that a certain doctor “wishes to inform his patients and the public that he may be summoned or consulted through the telephone either by night or day. The communication is made through the American Speaking Telephone Company, and is absolutely private and confidential.”

July 1878

Pre-history

- Mid-19th century: telegraph used to fetch doctors
- 1860: heart signals sent by telegraph
- 1876: Alexander Graham Bell patents the telephone
- 1879: A doctor describes listening to a child's cough through the telephone late one night and being able to decide an immediate visit was not required
- 1901: Linguaphone release language lessons on wax cylinders



Thank you

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