

# **The Development of Computer-Delivered Assessments by Durham University's Centre for Evaluation & Monitoring**

**Mark Wightman**

**CEM, Durham University**

# CEM

- 1981: Founded as Curriculum, Evaluation & Management Centre (Newcastle).
- 1983: Started first school monitoring project.
- 1996: Launched first computerised test.  
Moved to Durham.
- 2008: Became Centre for Evaluation & Monitoring.

# PIPS On Entry Baseline

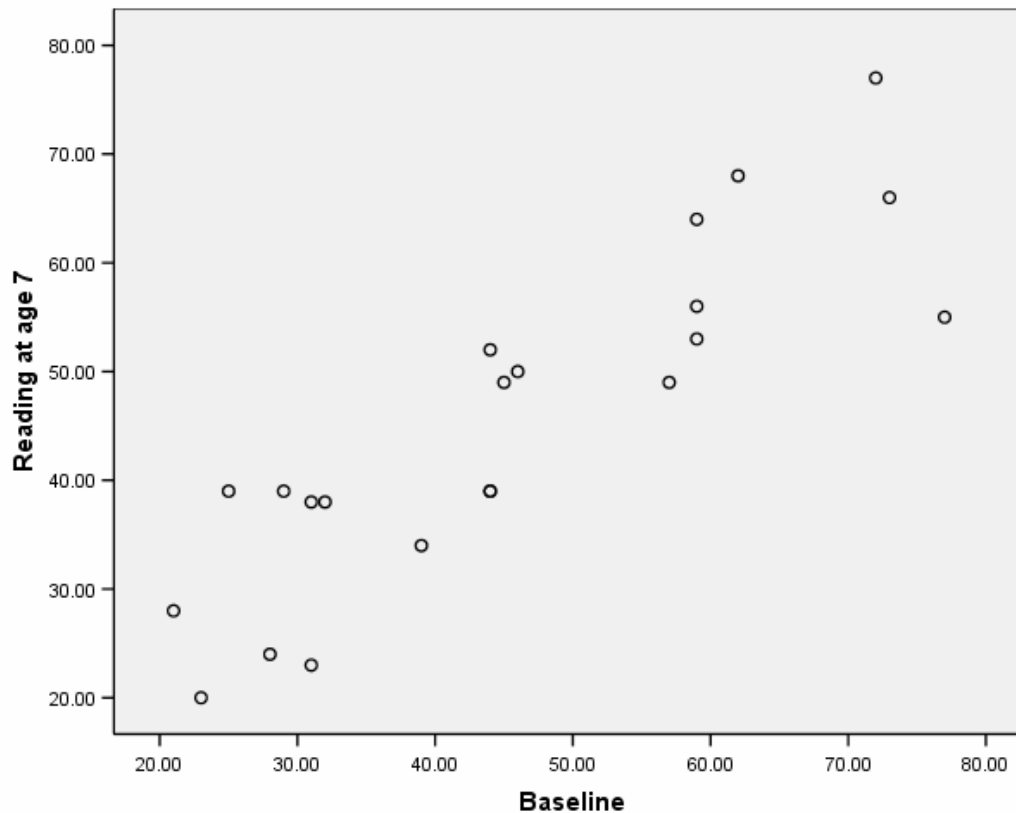
Computerised version: 1996 - present

## **P**erformance **I**ndicators in **P**rimary **S**chools

Devised for pupils who are first entering formal education in the United Kingdom

Aged 4+

# Correlation of PIPS On Entry Baseline scores with Reading scores at age 7



# PIPS On Entry Baseline Assessment: vocabulary acquisition



**Previous Test**

**Back to Start**

**Replay Audio**

**Right**

**Wrong**

Look at this picture. Can you point to some carrots?

# PIPS On Entry Baseline Assessment: ideas about reading/writing



Previous Test

Back to Start

Replay Audio

Right

Wrong

Can you show me someone who is writing?

# CEM Entrance Tests: 1999 - present

## Cronbach's alpha reliabilities

Verbal module: 0.92

Numerical module: 0.94

Non-Verbal module: 0.79

**Overall reliability: 0.95**

# Computer Adaptive Baseline Tests (CABT): 2004 - present

## Rasch Measurement



## CABT example question

Click on the word or phrase with the closest meaning.



book

cap

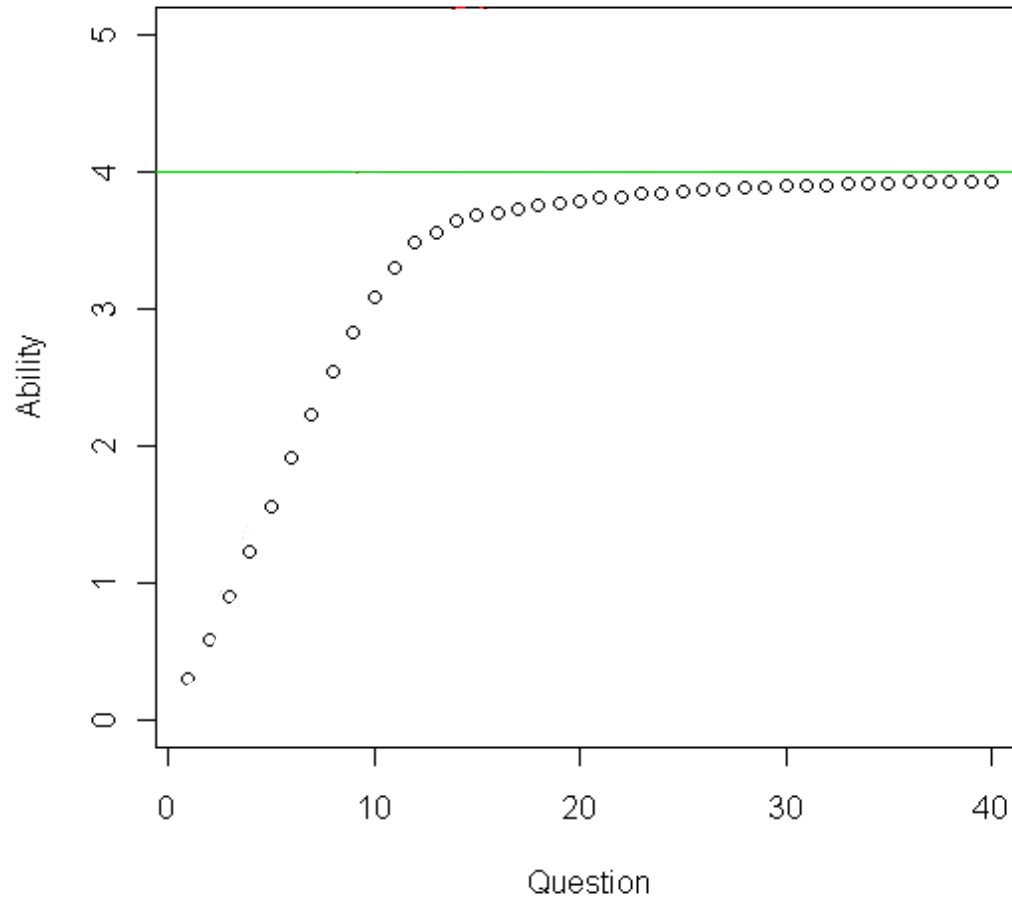
pencil

road

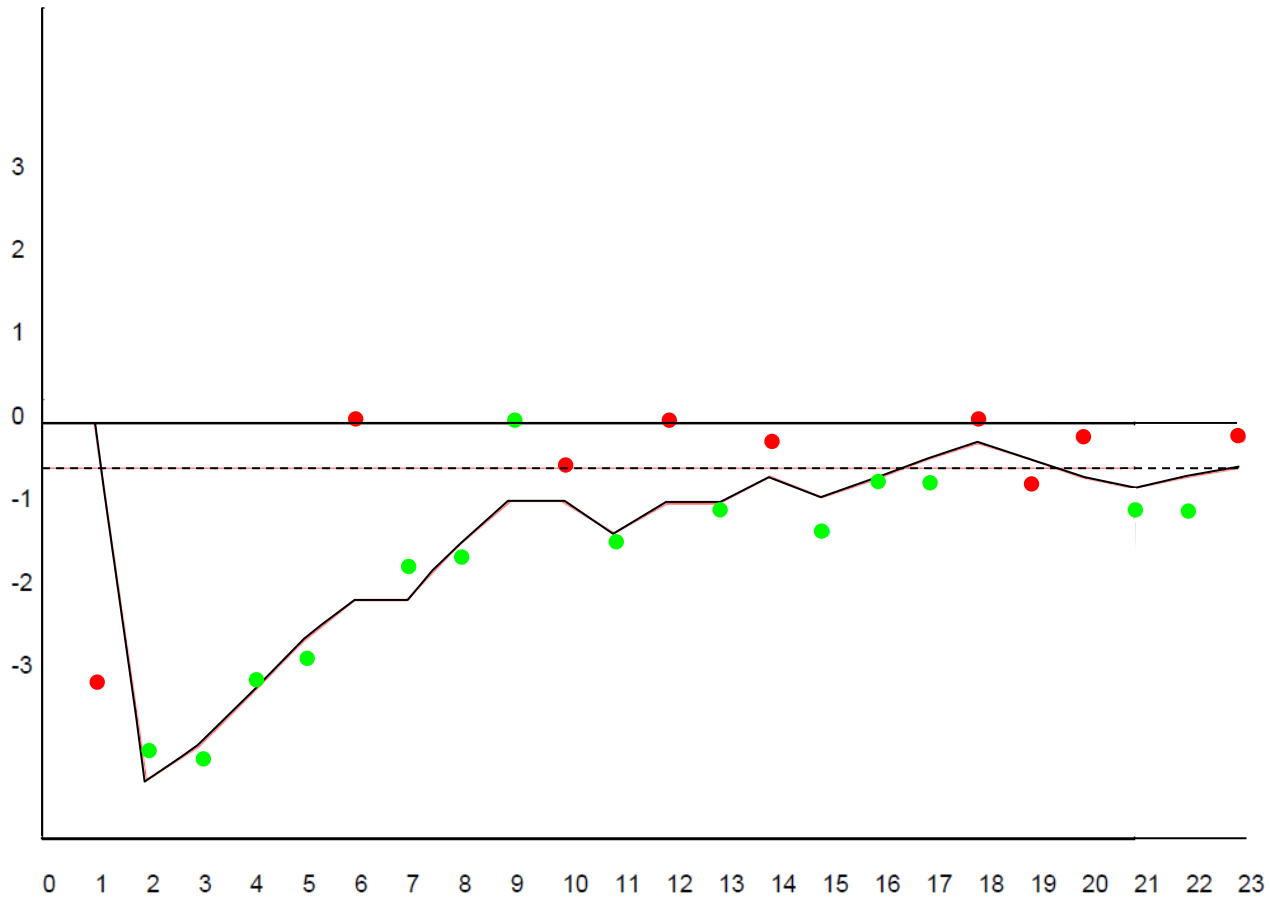
Example Question

Next

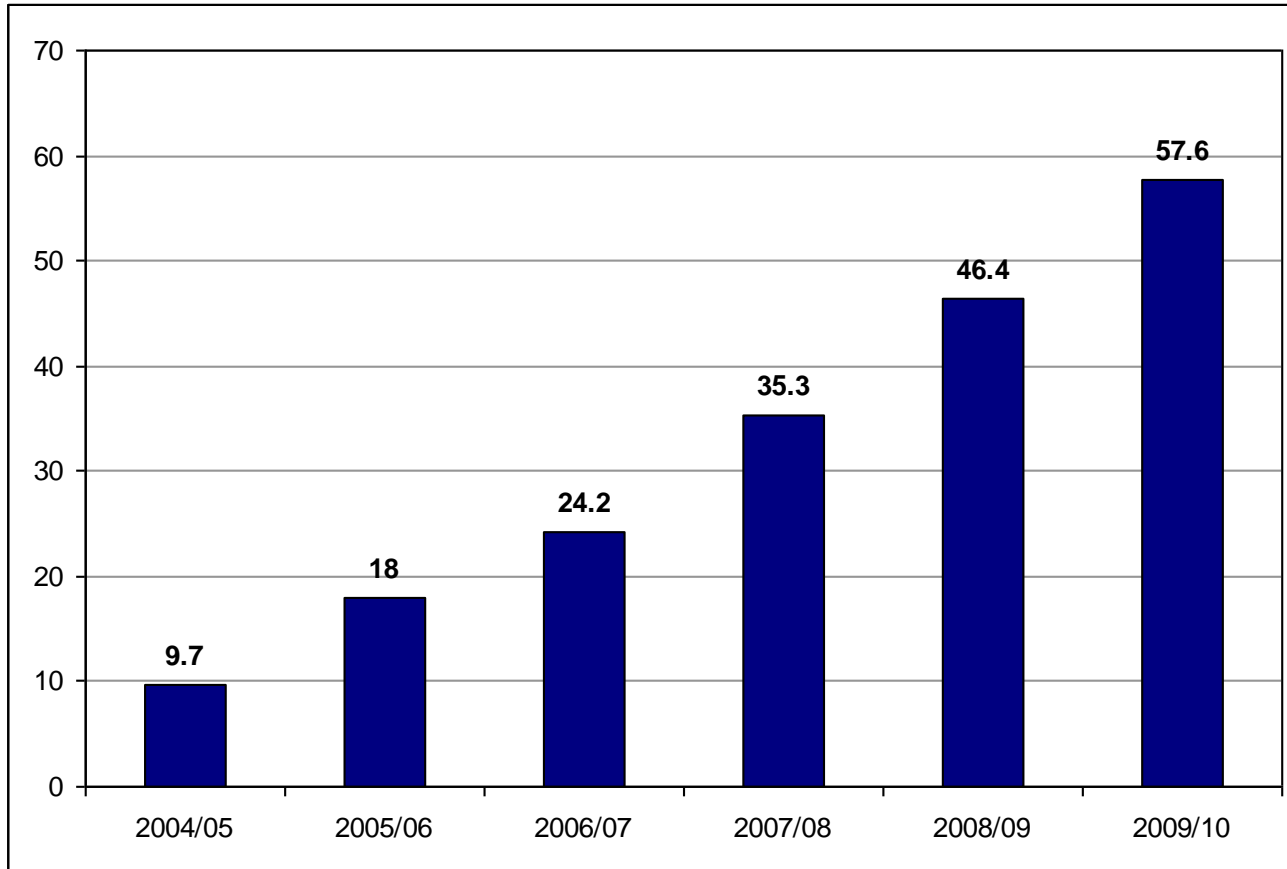
# CABT convergence



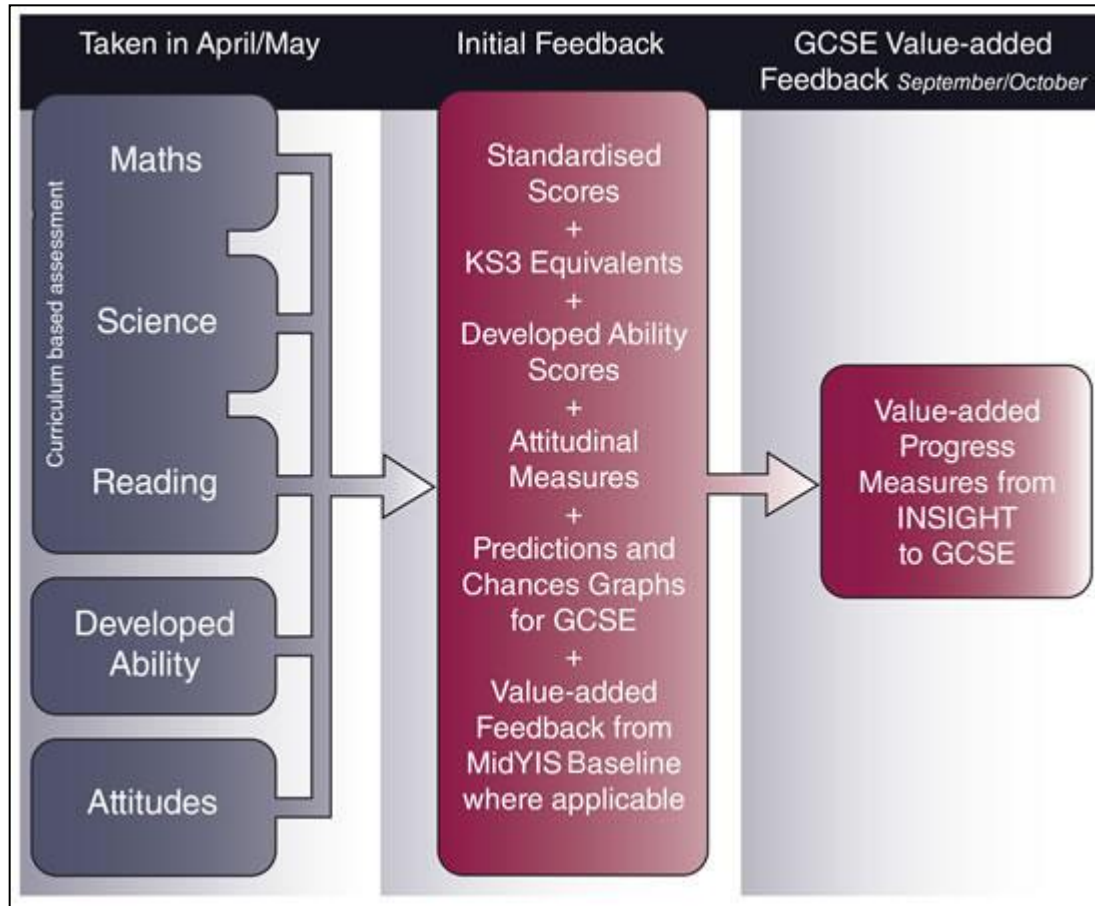
# CABT example



# Percentage of Yellis schools using CABT



# The Insight cycle



# Summary: lessons learned

- 1) It is important that there is close and constant communication between those creating assessment items and those developing the technical solution to deliver the assessment to schools.**
- 2) Computerised assessment solutions must be pragmatic.**
- 3) Any software installations should be kept to a minimum, and made as straightforward as possible.**

- 4) Considerable support needs to be offered to schools, particularly those using computerised assessments for the first time.**
  
- 5) Data security is a priority.**
  
- 6) Computer-adaptive assessment allows for the efficient gathering of test data that correlates strongly with later achievement.**



- 7) Computerised assessment does away with the need to print, ship and data enter test booklets.**
- 8) Computerised assessment is well suited to assessment paradigms that measure convergent thought.**
- 9) Computerised assessment opens up opportunities for providing tests to geographically distant schools.**
- 10) CEM's experience of schools within the United Kingdom is that they are increasingly willing to use an ICT-delivered solution for assessment.**

**[www.cemcentre.org](http://www.cemcentre.org)**

**[mark.wightman@cem.dur.ac.uk](mailto:mark.wightman@cem.dur.ac.uk)**