Using Interactive Student Response Systems

- What is an Interactive Response System?
- Overview of Functions
- How to Implement the System
- Experiences

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Example of electronic student response system
Think of ask-the-audience in “Who Wants to be a Millionaire?”

Each student issued with a 'clicker' with unique ID

Receiver gathers responses

Laptop software analyses and presents responses

Can be used for marking, quizzes, multiple choice tests

Can be integrated with powerpoint / excel to incorporate marks

Easy to set-up from scratch

Several similar systems exist - I will only speak of PRS
In lecture preparation:
create list of student names & clicker ID numbers
set-up a list of multiple choice questions for each lecture
during lecture ask students the question
response is shown as a frequency histogram

System uses infra-red signals
Works well with class size of ~50
Larger classes need RF technology
longer range (more expensive)

Total cost ~ £1800 (inc. VAT)
software
50 clickers
receiver
Terminology

**Class** - contains all information about the students & the course
- general information eg. course name, lecturer's name etc...
- student roster
- response map
- default settings for the information display

**Student Roster** - links student name to transmitter ID

**Response Map** - virtual layout of 'seating plan' for display

**Lessons** - Sets of questions are defined here i.e. lesson = lecture

**Sessions** - Where the responses are stored and marked

**Gradebooks** - Where the total marks per student are accumulated
Flexible setup:

- can ask multiple choice questions with up to 10 responses
- can ask questions with a numerical response
- choose marking scheme (or none)
- students can visually verify their response has been registered
- responses are displayed anonymously
  - students cannot see who got the question wrong!
- can set time limit for responses
- can allow only one chance at answer, or many attempts
- students can associate a confidence level to their response
  - press **H** or **L** button first
- master transmitter allows lecturer to control questions/responses/delays...
New Class: Importing a Student Roster

Double-click a Name or ID to change it

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- Import Roster
- Remove Roster
- Delete Name
- Add Names
- Report

OK Cancel
A Lesson consists of a list of questions, answers, marks.

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A Session records the student responses to a Lesson
New questions can be added quickly during the session if needed.
The Session marks student responses to sessions
Easy to manually override marks

Collects session statistics together
The Gradebook collects session marks from all sessions
Easy to manually override marks

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Other options also available - not yet explored
  import into PowerPoint directly
  self-paced quizzes
  incorporation with web-based tests (e.g. homeworks)
I implemented this in lectures last semester

- each student paid £10 deposit for clicker (so they don't lose them)
- money given back at end of semester in return for intact clicker
- students very enthusiastic
- positive comments in the student questionnaires

I found the system improved
- Attendance
- Attention
- Participation
- Feedback to me on conceptual grasp
Attendance

problem with my course: 9am lecture on Thursdays

clear correlation of attendance v performance

clickers can help with attendance

  5% of total course mark to response from clickers

  for each question:

    1 mark for incorrect answer

    2 marks for correct answer

rewards attendance at lectures

next year I plan to increase this to 15%
Attention
Use of questions “wakes up” the students ~20min attention span
I used 1-3 questions per lecture - about right
Each question takes ~few mins to pose, answer, discuss

Participation
Biggest benefit was enhanced student discussion and participation
Student can see how many others made same choice
If many students got it wrong: more emboldened to ask “why?”

Feedback
I got good / fast feedback on which concepts are not being understood
Better than a show of hands:
- more quantitative
- anonymous
- more participation