

Interwrite Student Response System (SRS) in the College of Science and Engineering

(Using MS PowerPoint Add-In and PC)

College of Science and Engineering,
August 2008
Interwrite Response v5

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Getting started with clickers (using MS PowerPoint Add-In and PC)

1. What are clickers?

Clickers are being used across the College of Science and Engineering as a way of introducing interactivity to lectures. Clickers are hand-held personal response systems (similar to those used in the TV programme - Who wants to be a Millionaire) that students can use to respond to questions posed by their lecturer. Gathering responses from students during lectures has helped lecturers gauge the understanding of their students, giving staff a chance to focus on areas the class is struggling with. There are various providers of clickers. The University is currently using Cricket clickers from the company Interwrite Learning (<http://www.interwritelearning.com/products/cricket/detail.html>)



Figure 1: Interwrite Cricket clicker



Figure 2: Interwrite PRS-RF (2-line LCD) clicker

2. Uses of clickers

You can use clickers in a number of ways in your lectures (adapted from Draper, S. 2002):

1. **Assessment, both formative and as practice for summative assessment.** Here the Multiple Choice Questions (MCQs) are meant to test content knowledge, and perhaps are drawn from a bank used for formal assessment on the course. The advantages of the equipment here are that "marking" is fully automatic, each learner knows immediately if they gave the right or wrong answer, how their performance on the question compares to the group as a whole, tailored explanations may be given by the presenter, and the presenter equally sees immediately how well the class measures up on that question (feedback from learners to teacher). The feedback cycle here takes about two minutes per item (somewhat longer if explanations are given). Any kind of MCQ may be used, provided the response is a single selection from a small fixed set: whether the usual rather shallow item, or one designed to probe understanding more than information retention to map the common misconceptions.
2. **Formative feedback on learning within a class** (i.e. within a contact period). Similar items might be used, but in order to discover and demonstrate what points should be focussed on during the class. Thus one or several such question items at the start of a class could be used to select a topic for detailed coverage, while the same or similar items at the end could demonstrate to what degree the group now understood the topic.

3. **Formative feedback to the teacher on the teaching i.e. "course feedback".** While the standard questionnaire at the end of a term, semester, or course has in general only a small effect on changing anything and takes a year to do so, a quick on the spot anonymous poll half way through a class (e.g. on whether the pace is too fast or too slow, the jokes too numerous or infrequent, the examples too many or few) can be used to change things immediately. Making adjustments to the teaching every 30 minutes, instead of only once a year, and furthermore making them for the particular group that gave the feedback, is much more likely to be effective than the usual practice.
4. **Peer assessment** could be done on the spot, saving the teacher administrative time and giving the learner much more rapid, though public, feedback. For example if each student has to give a verbal presentation and this is peer assessed, then at the end of their talk the teacher can display (say) each of 10 criteria in turn, and get the other students to enter their mark for this anonymously but on the spot, with the totals displayed.
5. **Community mutual awareness building.** At the start of any group e.g. a research symposium or the first meeting of a new class, the equipment gives a convenient way to create some mutual awareness of the group as a whole by displaying personal questions and having the distribution of responses displayed. For example, at a research meeting start by asking people's ages (which illustrates the advantage of anonymity), and the kind of department or institution they come from, and some alternative reasons for attending. At the start of a class, I might ask whether each student is straight from school or not, their gender, which faculty they belong to, whether they signed up for the course because it is their main interest, a side interest, or are just making up the number of courses they do.
6. **Possibly the most productive application, however, and the one with the largest body of existing research, is in using the equipment to initiate a discussion.** Here, a carefully chosen MCQ is displayed and the learners register an answer, thus privately committing to a definite opinion. The presenter then, however, does not indicate the "right" answer but directs the class to discuss their answers with each other. Having to produce explanations and reasons is powerfully conducive to learning, which of course is why researchers learn so much from giving talks and writing papers, and why teachers make their students write essays and answer questions. The equipment can be a significant help in introducing this, even into large classes.

Source: Draper, S. (2002). *Electronically enhanced classroom interaction*. Retrieved 26 May 2007, from: <http://www.psy.gla.ac.uk/~steve/ilig/handsets.html#Abstract>

3. Installation of required software

There are two methods for using the Interwrite Response system:

1. using **Interwrite Response software as a stand alone application (either preparing questions beforehand or as-you-go during the lecture)**
2. using **MS PowerPoint Add-In**

1. Interwrite SRS standalone method	2. MS PowerPoint method
Advantages <ul style="list-style-type: none"> - more reliable - more flexible - you can create/modify questions as you go (even during lecture) - if you are using clickers in a lecture room with two screens, you can run your clicker questions on one screen and your presentation on the other screen 	Advantages <ul style="list-style-type: none"> - ease of use - nicer design / fits into the template of your presentation - you are only dealing with one application / one file (therefore only needing one screen)
Disadvantages <ul style="list-style-type: none"> - development of questions is not as intuitive as in MS PowerPoint - design not as nice as in MS PowerPoint 	Disadvantages <ul style="list-style-type: none"> - if Interwrite Response freezes, your whole presentation freezes - questions need to be developed beforehand, it's not easy to modify questions during lecture

This document describes the second method: using MS PowerPoint and the MS PowerPoint Add-In to create clicker questions.

You need to install the following software:

1. Interwrite Response software

Get newest version from <http://www.interwritelearning.com/support/software.php> or ask your IT technician to install it (its part of the Managed Desktop software package).

You can also get it from your clicker support people at College, e.g. Sarah McConnell, Daniela Gachago, Karen Howie.

2. Register PowerPoint Add-In

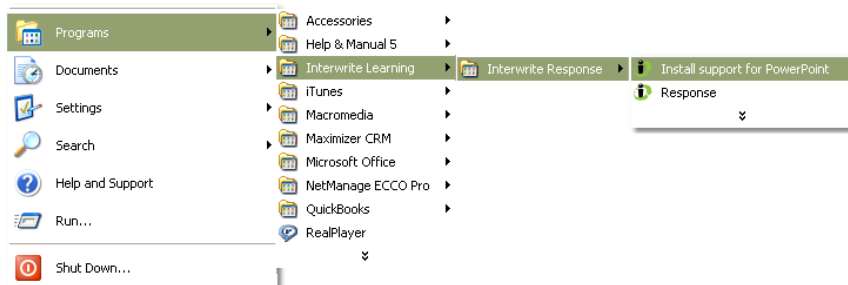


Figure 3: Registering PowerPoint Add-In*

Click Start – All Programs – Interwrite Learning – Interwrite Response – Install support for PowerPoint

On managed desktop machines it is found under 'Utilities' on the start menu.

* Screenshots are taken from Interwrite Response v5.10 for Windows

MS PowerPoint users: You need to do this every time you are using a PC in one of the lecturer theatres to run your clicker questions! You don't have to do this, if you are using your own personal laptop.

4. Creating clicker questions with MS PowerPoint

Once you have registered the MS PowerPoint Add-In, you should see the Response tool bar when opening MS PowerPoint.

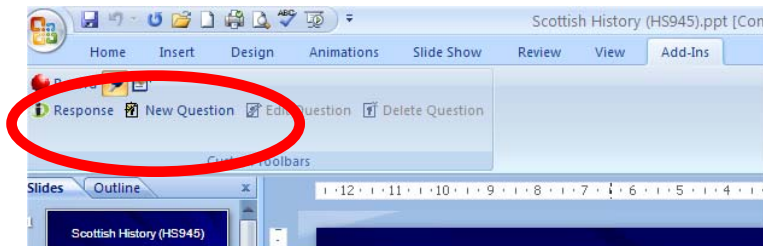


Figure 4: Response toolbar in MS PowerPoint

Create your presentation including your clicker questions as PowerPoint slides. Remember to number of your answers of questions. You might have to reduce your lecture content to be able to include clicker questions and allow time for possible follow-up discussions or explanations.

Once your presentation is completed, go back to the individual question slides and click **“New Question”** (to set up the mechanics behind the questions).

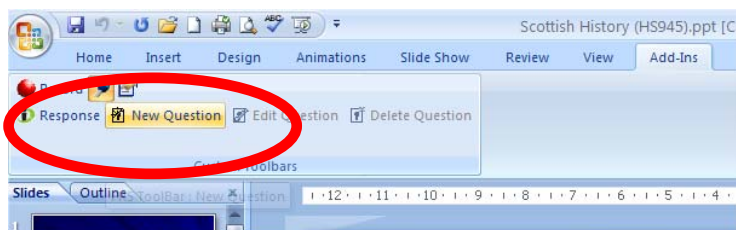


Figure 5: Creating a new clicker question

You will be asked to edit your **question properties**:

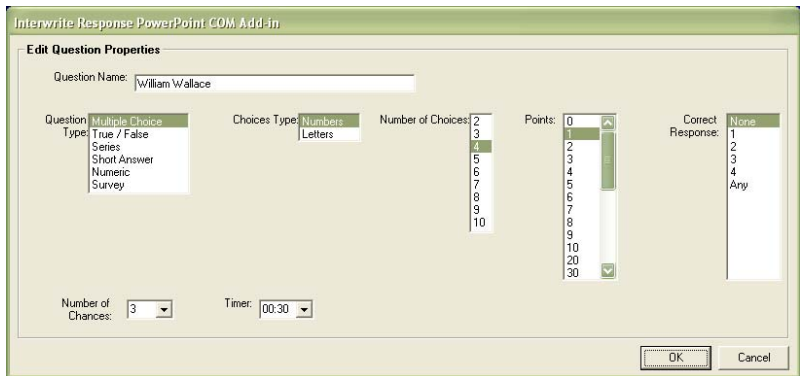


Figure 6: Editing question properties

- **Question Type** - for Crickets use Multiple Choice, True/ False or if there is “no correct answer” use Survey.
- **Choice Types** – choose the format to match the format used on the question slide i.e. numbered choices or lettered choices
- **Number of Choices** - choose the number to match the number of answer choices on your slide (in the range 1 to 6 or A to E, or T/F)
- **Points** – how many points are allocated for a correct answer (possibly more for harder questions and fewer for easy questions)
- **Correct Response** - if there is a correct answer and you want your students to know which the correct response is (rather than let them vote again). You can also select more than one correct answer. If you do this an additional menu will appear headed “Can/ Must Answer” and you need to select “Any”.
- **Number of chances** – how many attempts your students have to answer the question (only the last attempt will be recorded)
- **Timer** – initial time allocated within which students can respond, when the question is running and open to receiver responses (this can be changed in the lecture, when the question is being run)

Save your presentation either on your laptop if you use your personal laptop to run the clicker questions during class, in your M: drive or on a memory stick.

5. To run the clicker questions

Before the lecture:

If you are using a Managed Desktop PC: Go into the **Start Menu** and select **All Programs > Utilities > Interwrite Learning > Interwrite Response > Response**. On your own laptop it should be found directly under All Programs. The Response Launch Pad will open.

This can take up to 20 seconds.

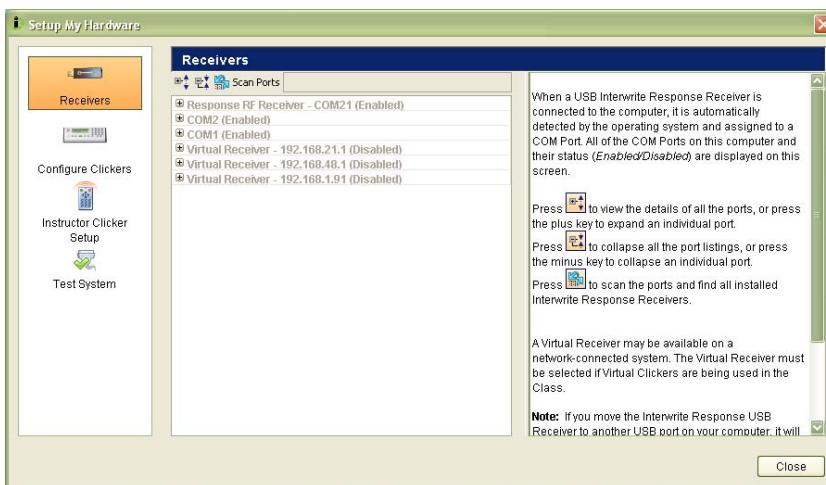


To check that the software is receiving transmissions from the clickers you can either run a test question in your PowerPoint presentation or you can use the test option in the “Setup My Hardware”.

If you are confident with using Response and PowerPoint, then it is faster to just start a presentation with a test question in it. Run the test presentation and then end the session.

Figure 7: Response “Launch Pad”

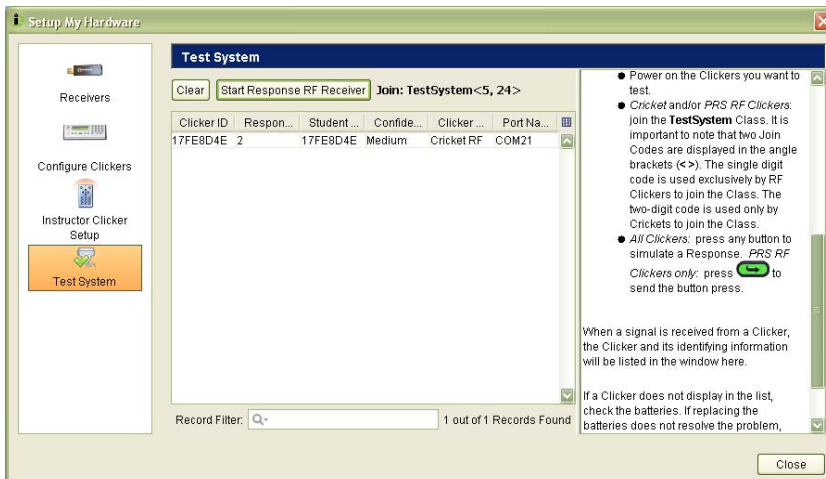
The alternative (or if the quick test to PowerPoint doesn't work as you expect), is to go in to “Setup My Hardware” from the Response Launch Pad.



When you first go into Setup My Hardware you will see a dialog which tells you what is connected and active. This is in the “Receivers” section.

Figures 8: Setup My Hardware - Receivers section.

To test that the system is active select the “Test System” option (the fourth/last option on the left-hand side of the dialog).



Click on “Start Response RF Receiver”, you should get a Join code for the TestSystem (you will see two join codes: the first single digit or letter, for the PRS-RF handsets, and the second two digit code for the Cricket handsets).

Figures 9: Setup My Hardware – Test System section

When you have a channel and the join codes are being displayed, join a Cricket handset, turn the handset on by firmly pressing the power button. The battery indicator light will come on briefly and there will be a green flashing light beneath the connection status (two-way communication) indicator (□), enter the two digit join code. When the handset first joins, you get a green light under the tick (□). When the handset is joined you will get an intermittent flashing light under the two-way communication (□) symbol. Press a response button on the handset and it will be registered. Figure 9 shows a single handset, with the radio ID 17FE8D4E, where the response “2” was pressed. The system is working.

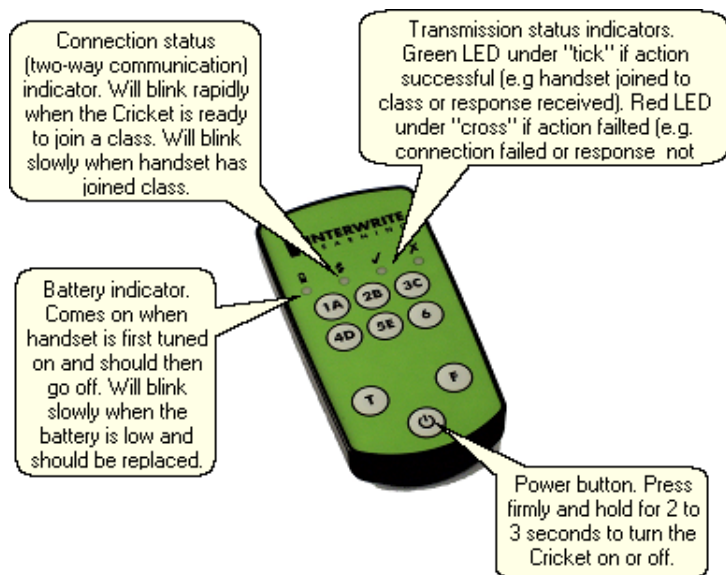
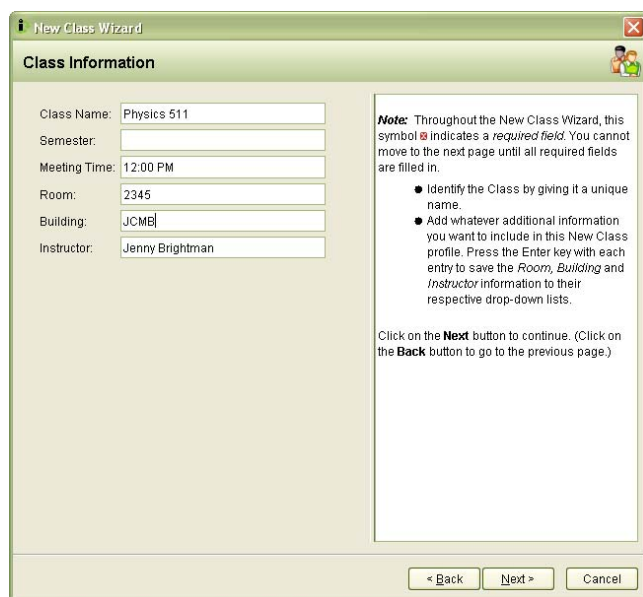


Figure 10: Annotated Cricket handset

Setting up a class

Depending on how you are using Response, you may want to set up your own database and your own class before the lecture. You can use the defaults (which exist so that the system can be used “instantly”), but if you want to give post-lecture feedback to your students, track their results or mark their response, then it makes sense, at the very least, to set up a class. To do this, go to the “Create A New Class” option on the Response Launch Pad, this takes you into the New Class Wizard.

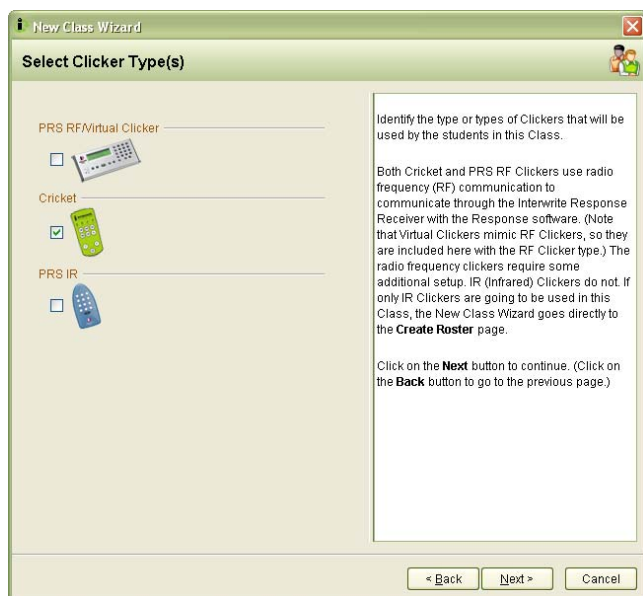


The minimum that you need is a Class Name, this is what will be broadcast. Use something short, that makes sense, like the course reference.

When you have set up the class name, click Next. You can skip the “sub-sections” dialog, unless you actually want to use sub-sections and move to the next dialog, which is “Select Clicker Type(s)”

Figure 11: New Class Wizard, opening dialog.

In the “Select Clicker Type(s)” dialog, select the option for Crickets. If you are using PRS-RF and Crickets, then select both options. Most likely you will only be using Crickets.



When you have selected the clicker type(s) click Next. If you are going to create a register by “grabbing” the clicker IDs over the air, then you can skip the next dialog. The first time you use the system, the unique radio IDs, which all clickers broadcast, will be captured in the session data. Create your register by moving the clicker IDs from the pending part of the roster, to the official roster. After doing this a first time, you will only see new clickers in the pending part of the roster in subsequent sessions.

Figure 12: New Class Wizard, Select Clicker Type(s)

DO NOT CLOSE RESPONSE DOWN, until after your lecture has finished.

If you are using MS PowerPoint, open the file containing the slides for your lecture. Start the slideshow. You will then be asked whether or not you want to activate Response. Click **yes**.

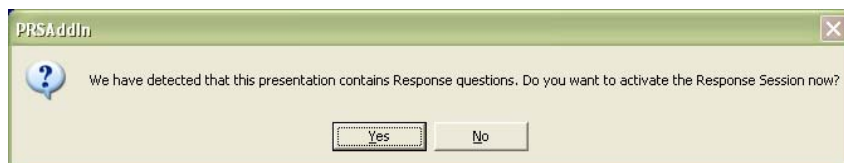


Figure 13: view slideshow as a Response session or as “normal” PowerPoint presentation

After a few seconds, the session dialog will open. There is a default session name given, based on the class name, date and time. This can be edited or accepted. Also, select the class that you want to use.

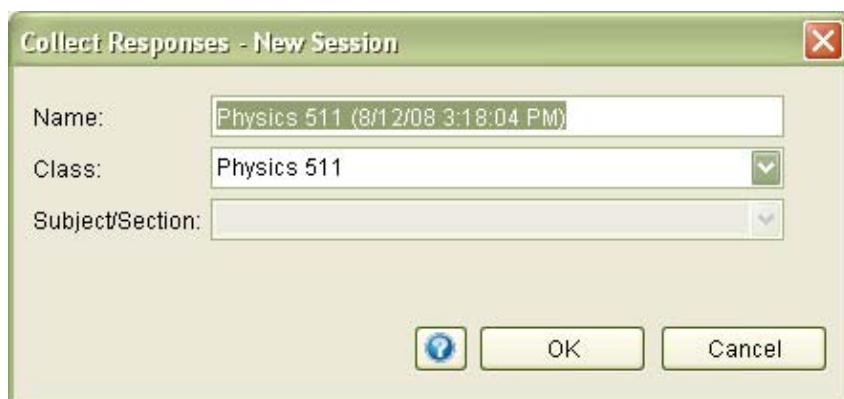


Figure 14: Selecting Session properties

During the lecture:

When a slide with a clicker question comes up during your lecture, it will either self-start or you need to **start the question yourself** (depending on your selection when setting up the new session). The Session Status Bar (shown below) will open.

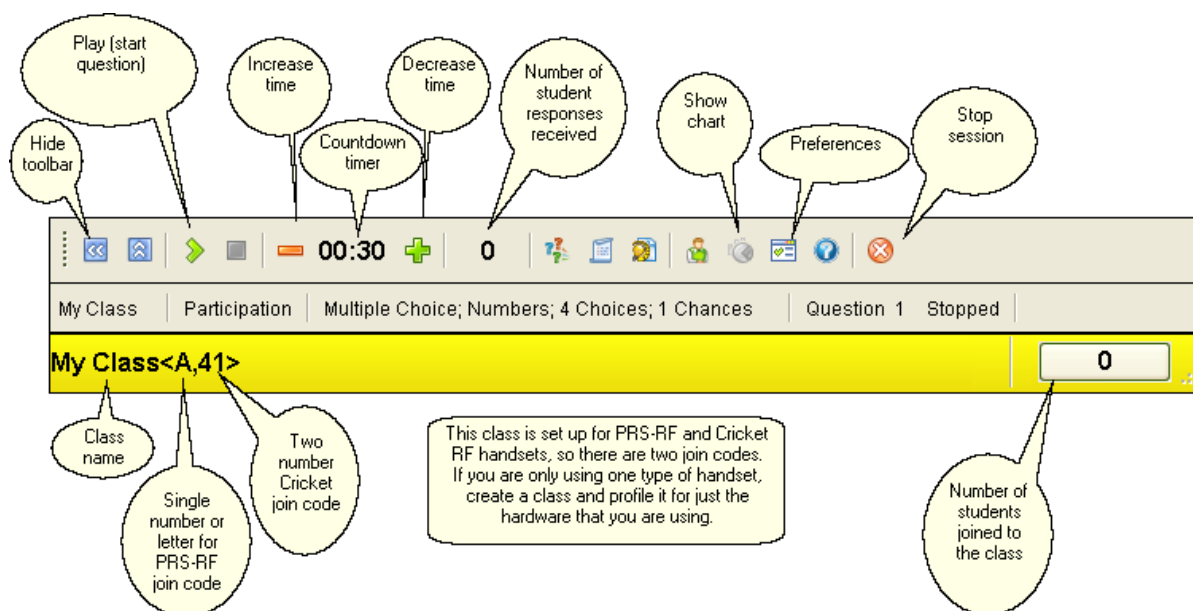


Figure 15: Start questions manually by clicking on green (>) play button

Ask your students to **switch on** their clickers (they should have taken out their clickers at the beginning of the class), by firmly pressing the power button for 2 to 3 seconds. The battery indicator light should come on and then go off again and the LED under the connection status indicator (the two-way communication symbol (□)) should flash rapidly. Enter the two digit join code. When the handset first joins, you get a green light under the tick (□). When the handset is joined you will get an intermittent flashing light under the connection status indicator (□).

Students can respond once the question is running and the countdown timer is counting down. You can add more time (using the “+” to the right of the timer), pause the question or stop the question, and depending on the number of attempts you have allowed, students can send more than one response, but only the last response is saved and marked.

Once the time has run out or you have stopped the question, the results chart will appear automatically, if you have not changed the default selection (“**Automatically show chart**”). If you have changed the preferences so that the chart is not shown automatically, then you will need to manually show the chart by clicking on the chart icon on the Session Status Bar.

If you indicated a **correct answer**, that answer will be marked specifically. You can customise the colours on the chart using the global preferences, which can be accessed through Manage My Data, Edit Menu, Global Preferences Option. Alternatively you can access the Global Preferences through the preference icon on the Session Status Bar.

You have a variety of option for the result chart:

- You can change or set a correct answer (if you haven't done so before)

- You can change display of chart (with a choice of vertical or horizontal bar chart or pie chart)
- You can change between results being displayed as numbers or percentage
- To get back to question click on **Close**

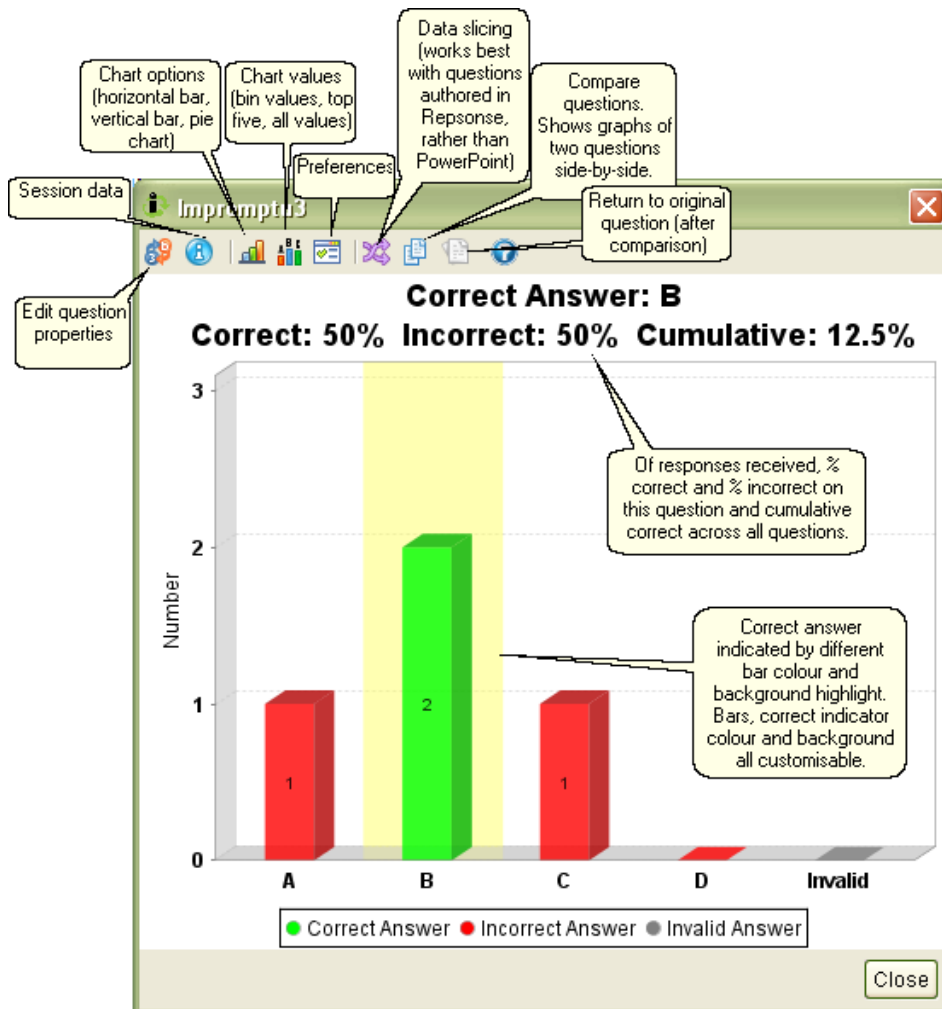


Figure 16: Results chart

After the lecture – accessing data

The Response software records all students' responses. To access this data, you need to end the class (which means that all handsets will be disconnected, and if not turned off, they will automatically power down after two minutes) and go into "Manage My Data" from the Response Launch Pad.

To end the class click on the end/ stop session icon (the furthest right icon on the Session Status Bar) and select "End the Class" in the End Session dialog.

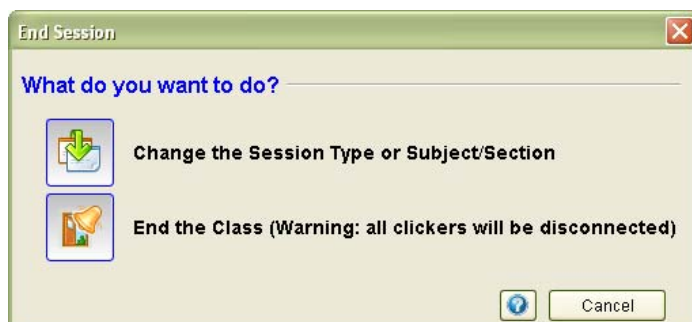


Figure 17: End Session dialog

You may need to tab to the Response Launch Pad, once there select “Manage My Data” and you will see this window, with your classes listed down the left-hand side. Select the class for which you want to view session, attendance and gradebook data.

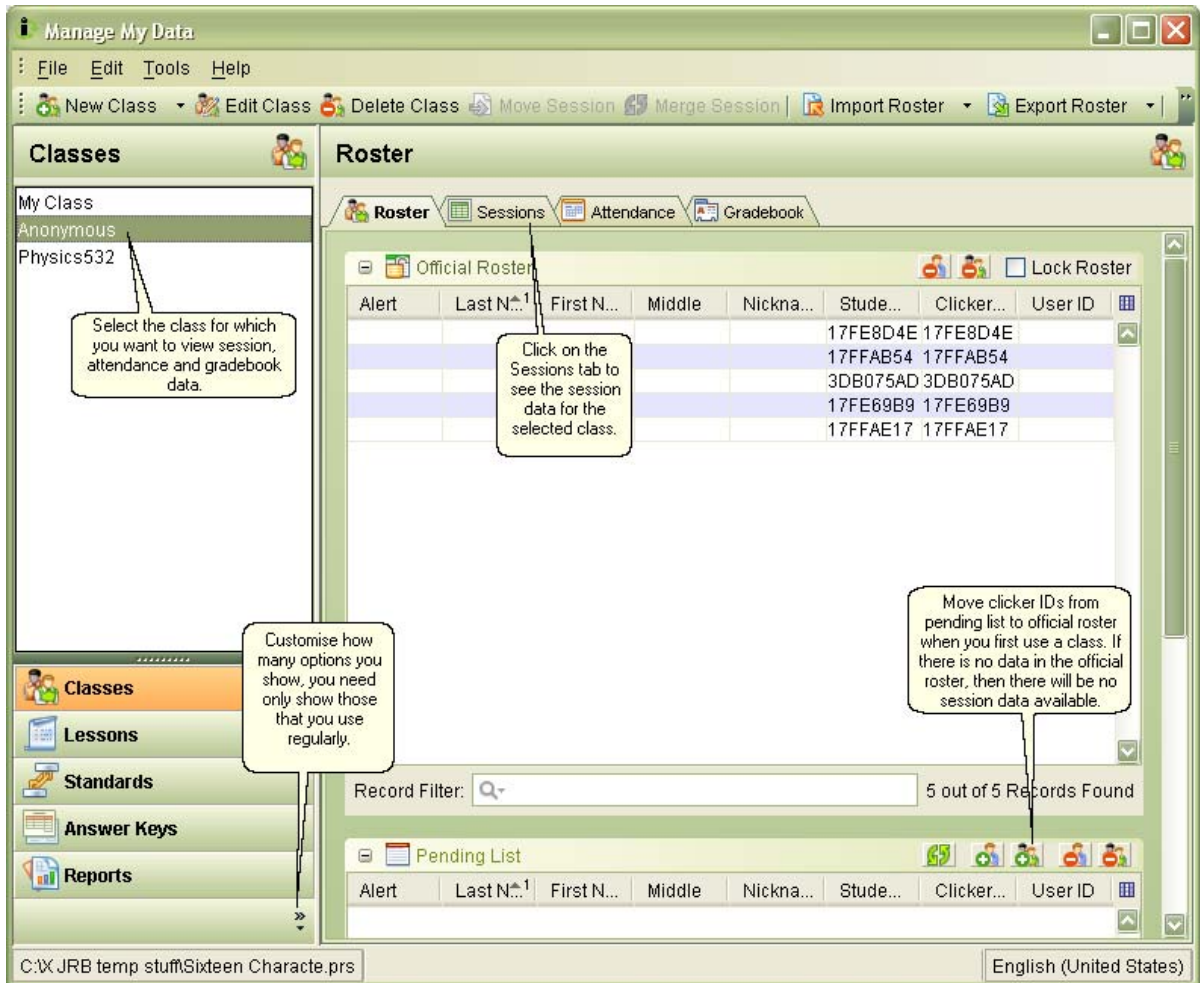


Figure 18: Annotated Manage My Data window