

A staff development workshop on using digital technologies for a group of teachers

Many schools have data-loggers, where they are often seen as a resource for science lessons.

This plan combines 2 sessions, one that was delivered in the first set of 2-days, and left delegates with a gap task, and the second in the next 2-day conference.

The sessions demonstrated an introduction of dataloggers to learners, gave delegates experience of using different loggers, and identified their potential as tools for developing mathematical understanding by exploring the graphing facilities for sound, light and temperature.

What I did

I selected this activity since using a data-logger is a relatively simple thing to do and something that can be undertaken by someone with relatively limited skills in digital technologies. Their use can be used to help support and enhance the mathematical understanding of both teachers and pupils.

They can also be used, with relative ease, to create a range of diagrammatical representations and these can be used to enhance children's skills in graphical interpretation, estimation and prediction.

A representative from one of the major data-logger suppliers agreed to demonstrate the functionality of the machines as part of each session.

What happened

Session 1:

A colleague and I demonstrated basic use of one type of data-logger and asked delegates to explore and make some recordings around the site. These were then transmitted through a smart board. The strengths and weaknesses of the data collected (i.e. that the temperature readings were least interesting!) were discussed.

A representative from a different data-logger firm then demonstrated the functions of a different type of logger, both on and off screen, and delegates were invited to explore further.

Possibilities for their use were discussed, and the gap task was introduced. Delegates were loaned a data-logger that they could use for this.

Session 2:

This session had been modified from the original plan, as extra delegates had decided to join the group who not used data-loggers before.

Delegates and trainers who had engaged in the gap task, spoke enthusiastically about the children's engagement and learning, most particularly a group who had gathered evidence to answer the question 'Which class is noisiest?' in their school!

This was followed by the representative from the data-logger firm who had loaned the equipment demonstrating the different graphical representations that are available, and giving delegates an opportunity to explore these for themselves. His presence was very useful in this session, as his experience enabled him to respond to specific questions from delegates - for example 'Can I overlay graphs?' and more 'Can I..?' and 'How do I..?' questions.

There was a rich discussion about the breadth of mathematics that was addressed as these machines were used, and how the focus was always on **interpreting** the graphical representations

A staff development workshop on using digital technologies for a group of teachers

and how this is the crux of data handling. There was also a strong feeling about how the real 'experiential' data, is far more meaningful and motivational for learners, than fabricated data. I ended the session by demonstrating the use of a motion sensor, and exploring the 'stories' that can relate to the graphs that are generated.

Reflection

The most powerful part of these sessions was the experiences of delegates from the gap task - all of which were activities undertaken in 'real time' on the loggers.

It would be even better if these were three sessions with gap tasks between, so delegates could have explored some of the other functions of the machines.

I also found it very useful to have the representative from the data-logger company present.

Session outline

Session 1

<p>Aims for the session:</p>	<p>This workshop aims to enable delegates to:</p> <p><i>Gain an overview of the range of dataloggers for primary education that are available;</i></p> <p><i>Become familiar with how to use a selection of resources;</i></p> <p><i>Increase delegates' confidence in using dataloggers within the mathematics curriculum.</i></p>
<p>Resources:</p>	<p><i>10 X Data harvest EasySense for loan until the follow up session</i></p> <p><i>Log it Explorer</i></p> <p><i>Factsheets for each of the available dataloggers – (Data harvest, TI CBR, Log-it)</i></p> <p><i>Copies of (British Educational Communication and Technology Agency, 2003)</i></p> <p><i>Adaptations of EasySense Q Primary Curriculum activities – light, sound and heat</i></p> <p><i>Activity for motion sensor</i></p> <p><i>Extract from national curriculum mathematics to highlight mathematics</i></p>
<p>Session description</p>	<p><i>Dataloggers have been used over many years to support the collection of real data inside and outside of the primary classroom. In this session you will become familiar with a range of different devices and gain some hands-on experience in their use. Some successful lesson approaches for mathematics will be shared.</i></p>

Using data-loggers in the primary classroom

A staff development workshop on using digital technologies for a group of teachers

Who is session aimed for?	Primary: ITE tutors and LA consultants/advisers who will be leading similar sessions for trainees and teachers.	
Time	Activity <i>i.e. what are the workshop delegates going to be doing?</i>	Key questions to ask <i>i.e. what is the workshop leader going to be doing/saying?</i>
11:30 – 12:15	Overview of the workshop Introduction to the technology and the focus on collecting five data sources: light, sound, temperature, motion and time.	
	Ice-breaker for using a datalogger Give pairs of delegate a datalogger and send them off to explore.	If you had a migraine – where would you sit in the hotel? Prove it!
	Reviewing a range of activities Allow pairs to choose an activity and a datalogger and work it through.	Where is the maths? Can you audit the activity and highlight what mathematics might be covered?
12:15 – 12:45	Consider where and how datalogging might sit within the primary mathematics curriculum? Here is the NC document – highlight the aspects of Data Handling and Number that might be covered.	How did your activity contribute?
12:45 – 13:00	Plenary – next steps	
Follow up	Between session task- to try an activity using dataloggers, ideally with children, and be prepared to feedback at the follow up session.	
Resources	Becta Technical paper on datalogging from 2003. L&SDevInDTWs02.ppt L&SDevInDTWs02Task.pdf	

Using data-loggers in the primary classroom

A staff development workshop on using digital technologies for a group of teachers

Session outline

Session 2

<p>Aims for the session:</p>	<p>This workshop aims to enable delegates to:</p> <p><i>Gain an overview of the range of dataloggers for primary education that are available;</i></p> <p><i>Become familiar with how to use a selection of resources;</i></p> <p><i>Increase delegates' confidence in using dataloggers within the mathematics curriculum.</i></p>	
<p>Resources:</p>	<p><i>8 X Logit Explorer</i></p> <p><i>10 X EasySense dataloggers (DataHarvest to bring)</i></p> <p><i>Factsheets for each of the available dataloggers – (Data harvest, TI CBR, Log-it)</i></p> <p><i>Copies of (British Educational Communication and Technology Agency, 2003)</i></p> <p><i>Adaptations of EasySense Q Primary Curriculum activities – light, sound and heat</i></p> <p><i>Activity for CBRs</i></p> <p><i>Extract from NC to highlight</i></p>	
<p>Session description</p>	<p><i>Dataloggers have been used over many years to support the collection of real data inside and outside of the primary classroom. In this session you will become familiar with a range of different devices and gain some hands-on experience in their use. Some successful lesson approaches for mathematics will be shared.</i></p>	
<p>Who is session aimed for?</p>	<p><i>Primary: ITE tutors and LA consultants/advisers who will be leading similar sessions for trainees and teachers.</i></p>	
<p>Time</p>	<p>Activity</p> <p><i>i.e. what are the workshop delegates going to be doing?</i></p>	<p>Key questions to ask</p> <p><i>i.e. what is the workshop leader going to be doing/saying?</i></p>
<p>11:30 – 11:35</p>	<p>Overview of the workshop</p> <p>Welcome the new attendees and explain that some people attended the session</p>	

A staff development workshop on using digital technologies for a group of teachers

	<p>back in December and will be feeding back on activities that they trialed using dataloggers as part of their Gap task.</p> <p>Ian Haynes, from Data Harvest is joining the session to support the use of the EasySense datalogger.</p>	
11:35 - 12:15	<p>Feedback by delegates who had trialed Datalogging activities for their gap task – with a focus on drawing out the mathematics within the activities.</p> <p>What did you do? What went well? What were the barriers? Where was the maths? Focusing on the delegates activities - using the NC document – highlight the aspects of Data Handling and Number that might be covered.</p>	How did your activity contribute?
12:15 – 12:50	<p>Input from representative</p> <p>Set up a task for them to do and bring back using three different sensors – temp, light and sound – to last no more that 10-15 minutes – and allow for 10 minutes feedback</p>	
12:50 – 12:55	<p>Getting moving with maths</p> <p>Demonstration of the use and potential of using a motion detector as a prompt to thinking about a different sort of graph.</p>	
12:55 – 13:00	Plenary – next steps	
Resources	<p>Becta Technical paper on datalogging from 2003.</p> <p>L&SDevInDTWs02.ppt</p> <p>L&SDevInDTWs02Task.pdf</p>	