

Example to illustrate some elements of the practitioner research cycle

Please note that this is being presented to illustrate some issues that commonly occur during some stages of the Practitioner Research Cycle. As such it is NOT exemplary (in the sense of an example to be emulated).

Pascale's context

Pascale works in a school for pupils aged 5 to 19. Pascale has overall responsibility for maths across the full age range. There are specialist maths teachers for the older pupils (Year 7 upwards). The school's catchment area is diverse, pulling in pupils from the local council estate as well as from a new private estate. Eight percent of the students receive free school meals. Pupils come from a range of cultural backgrounds, with white British pupils accounting for around 80% of the intake. The school has a lower than average proportion of children deemed to have special educational needs. The overall effectiveness of the school was Grade 2 (i.e. Satisfactory) in the last inspection (in 2009).

Need

Pascale's brief summary of 'the problem'

Some of the boys in the Year 7 maths classes are being quite disruptive, which is impacting upon the rest of the pupils. As a result all of the pupils are making less progress than one would expect.

Pascale's brief summary of what she hoped to achieve (How will I know if I have resolved the problem?)

All pupils are more engaged in the maths lessons. All pupils make better progress than they are doing at present.

Find out

Pascale's initial thoughts about a possible solution to the problem

Make the lessons more interactive. Perhaps making better use of the IWBs or other ICT (the boys seem to respond well to using ICT).

Pascale's further thoughts about a possible solution to the problem having talked with colleagues

Make the lessons more interactive and check pupils' understanding more frequently (formative assessment) so that the content is better matched to their needs.
Perhaps use voting systems to get feedback on the IWB throughout the lesson.

Pascale's keywords

Interactive, engaged, formative assessment, maths, voting systems, progress (attainment)

Pascale's search results

After a few not very successful searches Pascale refined her keywords and searched for:
pupil engagement voting systems

This produced the following results

About 50,200 results (0.12 seconds)

['Pretty Lights' and Maths! Increasing **student engagement** and ...](#)

Increasing **student engagement** and enhancing learning ...
portal.acm.org/citation.cfm?id=1531139

[Promoting **student-centered active learning** in lectures with a ...](#)

Increased **student engagement** and the immediate feedback obtained during lectures were ... In contrast, electronic response **systems** may provide accurate and rapid
Answering PRS questions (**voting**) was also perceived to be enjoyable ...
advan.physiology.org/content/33/1/60.full

[Electronic interaction improves attainment](#)

Voting systems allow the answers of each pupil to be displayed instantly and If you are interested in increasing **pupil engagement**, making lessons more ...
www.teachingexpertise.com/.../electronic-interaction-improves-attainment- 3866

[Techno Watch](#)

The most immediate benefit of using any **voting system** in a classroom is one of **pupil engagement**. There is always a positive response from use of voting ...
www.ennovatecentre.co.uk/technowatch.php

[SB 547 Senate Bill - Bill Analysis](#)

... Steinberg (D) Amended: 5/4/11 **Vote:** 21 SENATE EDUCATION COMMITTEE: 7-3, ... Measures of the degree to which **pupils** graduate from high school with the ... **system**, a measure or measures of **pupil** satisfaction with and **engagement** in ...
www.leginfo.ca.gov/.../sb_547_cfa_20110527_145931_sen_floor.html

[BETT SHOW - Turning Technologies](#)

Turning Technologies' proven research-based electronic **voting system** (EVS) enables ... and technology currently available in the field of **student** assessment. ...
www.bettshow.com/.../Show_Exhdetails1.aspx?...

[SB 547 Senate Bill - Bill Analysis](#)

Measures of the degree to which **pupils** graduate from high school with the ... **system**, a measure or measures of **pupil** satisfaction with and **engagement** in their ... AB 224 passed out of the Assembly Education Committee on April 6 by a **vote** of ...
www.leginfo.ca.gov/.../sb_547_cfa_20110426_113012_sen_comm.html

[The Impact of Voting Systems in the classroom](#)

File Format: PDF/Adobe Acrobat

Bill Tagg Bursary – The impact of **voting systems** in the classroom. John Wasteney. 15 **engages** all **pupils** inclusive, engaging for the **pupils** engaging and ...
www.strategict.co.uk/BTBfinal.pdf

Pascale's notes on useful sources

[Electronic interaction improves attainment](#) – magazine article by head teacher about positive impact of voting systems on Year 4 pupils' mental maths.

[The Impact of Voting Systems in the classroom](#) – research report from 2005 on use of voting systems in schools. Includes literature review and questionnaire results. Highlights some issues with voting systems, but suggests they have the potential to enhance pupil enjoyment and participation in lessons. Anonymity was a positive factor.

Pascale's list of possible solutions

Make the lessons more interactive and check pupils' understanding more frequently using voting systems, so that the content is better matched to their needs.

Plan

Pascale's initial research question

What impact would using voting systems in maths lessons have on the level of engagement?

Pascale needed more information

Before Pascale could investigate the answer to her main research question she needed to find out more about voting systems and, in particular, what it would be feasible to implement in her school.

She therefore defined a set of sub-questions:

- What are the alternative voting systems available?
- How much do they cost?
- What other issues are associated with each one?

She went through the Find out stage again in order to answer the above questions. The outcome of her further exploration was a realisation that the school couldn't afford to buy sufficient sets of voting devices for all the pupils/classes. However, an alternative solution was to use free software (e.g. [Poll Everywhere](#)) that would enable pupils to vote using their mobile phones or other internet enabled devices.

This created a new set of questions:

1. How many of the pupils have suitable mobile devices that they would be willing and able to use in maths lessons?
2. Would it be possible to make provision for those pupils who did not have their own devices?
3. What changes would need to be made to the school 'no phones' policy and how could this policy change be achieved?

Pascale then carried out a feasibility study in order to answer these questions. In order to do that she went through the Plan–Do–Reflect stages for that feasibility study (that process is not described here).

Having completed her feasibility study she discovered that it would be feasible for the pupils to use their own mobile devices. After some negotiation about bending the school policy on mobile phone use so that she could carry out her research to address the original need she was able to proceed to explore a slightly revised version of her original research question.

Pascale's revised research question

What impact would using Poll Everywhere in maths lessons have on the level of pupil engagement?

Pascale's permissions

Pascale spoke with the head teacher and her colleagues and got verbal agreement to proceed with the research.

Pascale went into each of the Year 7 classes and explained to the pupils that she wanted to explore the use of Poll Everywhere in maths lessons and explained what this would involve from their point of view. She then handed out consent forms and asked them all to sign them and give them back to her by the end of the lesson.

Pascale sent a letter to the Year 7 pupils' parents explaining that she was exploring the impact of

using voting systems in maths lessons, and that this would mean the pupils using their mobile phones to vote (or in one or two cases using an iPod Touch provided by the school). She invited them to come to a meeting after school if they had any questions about the research, and asked them to return a reply slip confirming that they were happy for their child to be involved in the research.

Pascale's data collection plan

Key indicators/measures	What data do I need to collect?	How will I collect them?
Level of pupil engagement during lessons	Number of times staff have to re-focus or reprimand pupils each lesson	Observation – keep tally sheet
	Amount of work that is completed during each lesson	Sample pupil's work/exercise books
	Feedback from pupils	Online questionnaire
		Informal feedback through discussion with pupils

Pascale's questionnaire (try it at www.surveymonkey.com/s/RPJ8RVL)

Pascale's questionnaire
Exit this survey

***1. What is your name?**

2. Your gender
 Boy Girl

***3. Your maths group**

4. How much does your maths teacher use the voting system in your lessons (on average)?

Not at all Not much Some of the time Quite a lot Most of the time

Amount of time

***5. Which of the following do you use to place your vote?**

My mobile phone
 My iPod touch
 My netbook/laptop
 A school iPod Touch
 A school computer
 Other (please specify)

***6. Which of the following best describes how you place your vote?**

I send a text message
 I use Twitter
 I use a webpage
 Other (please specify)

***7. To what extent do you agree with these statement**

Strongly disagree Disagree Not sure Agree Strongly agree

I am more motivated, more engaged and learn more when the voting system is used in lessons

I enjoy maths lessons when the voting system is being used

Reflect

Pascale's questionnaire responses

There were 31 responses to the questionnaire all of which said they were from maths group 7A. The group only contains 30 pupils so at least one of the responses must be a duplicate or not from a pupil in 7A. Looking at the names given, several did not correspond with the actual names of the pupils (e.g. whilst there is a pupil called Tony there isn't one called Toni).

2. Your gender		Create Chart	Download
		Response Percent	Response Count
Boy		51.6%	16
Girl		48.4%	15

7A has 16 boys and 14 girls. This lends weight to the view that the entry for Toni should be discounted.

4. How much does your maths teacher use the voting system in your lessons (on average)?								Create Chart	Download
	Not at all	Not much	Some of the time	Quite a lot	Most of the time	Rating Average	Response Count		
Amount of time	3.2% (1)	19.4% (6)	67.7% (21)	9.7% (3)	0.0% (0)	2.84	31		

There was general agreement that the voting systems were being used to some extent. As you would expect this did not account for most of the time in lessons.

5. Which of the following do you use to place your vote?		Create Chart	Download
		Response Percent	Response Count
My mobile phone		90.3%	28
My iPod touch		0.0%	0
My netbook/laptop		0.0%	0
A school iPod Touch		6.5%	2
A school computer		0.0%	0
Other (please specify) Show Responses		3.2%	1

The responses on what devices were used confirm the information about who we have lent equipment to (two school iPod Touches).

6. Which of the following best describes how you place your vote?		Create Chart	Download
		Response Percent	Response Count
I send a text message		83.9%	26
I use Twitter		0.0%	0
I use a webpage		12.9%	4
Other (please specify) Show Responses		3.2%	1

These responses about how pupils vote match well with the data from Poll Everywhere (which also records how votes have been placed).

7. To what extent do you agree with these statement		Create Chart		Download			
	Strongly disagree	Disagree	Not sure	Agree	Strongly agree	Rating Average	Response Count
I am more motivated, more engaged and learn more when the voting system is used in lessons	6.9% (2)	20.7% (6)	10.3% (3)	51.7% (15)	10.3% (3)	3.38	29
I enjoy maths lessons when the voting system is being used	6.5% (2)	29.0% (9)	3.2% (1)	54.8% (17)	6.5% (2)	3.26	31

Whilst the majority of the pupils agree or strongly agree that using the voting systems makes maths lessons more engaging (62%) and enjoyable (61.3%) there are a large minority of pupils who disagree or strongly disagree (27.6% and 35.5%). On browsing through the responses to question 7 it looks like there is a gender difference, with boys being more positive about the use of the voting systems than girls, many of whom disagreed that the voting systems improved maths lessons.

It is therefore unclear from these questionnaire responses whether or not the use of voting systems has solved the problem.