An Essential Guide to the Use of QR Codes for Primary Teachers

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A Naace Publication by Tim Scratcherd
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Foreword from the Sponsors

Here at Plum Innovations, we are always proud to be a company that embraces and rejoices in using Ed Tech creatively and effectively, so having an opportunity to sponsor a piece like this was very exciting for us. The chance to really help spread new technology into classrooms felt extremely important in regards to helping ensure our schools are consistently kept up to date with advancements relevant to them. Reading this paper was extremely educational and the plethora of uses for QR codes in schools has got all of us here talking over the future possibilities of the technology behind them. Particularly of note, we believe that in an age where internet safety is of a more vital importance than ever before, QR codes are going to be a great way to help ensure students are kept on track to a specific task. Similarly, the opportunities to provide simplified access to a variety of sites presents many opportunities in the classroom. We are looking forward to being a company aiding in such implementations across our schools and we hope, after reading the paper, you will all be similarly enthused.

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About the Authors

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"I picked up a guide at BETT. It was easy to follow- we now have codes all over our displays."

Yvonne Aylott, Westfield Arts College, Dorset

Summary

QR Codes are an exciting, simple, innovative way of providing access to selected information. They are widely used for everyday purposes. As schools acquire more and more devices with cameras in them, they can be used for enhancing learning and teaching. Because it is easy not just to use them but also to make them, they are a fun and worthwhile tool for both pupils and teachers to exploit.

Introduction

A QR (Quick Response) Code is a two dimensional version of the barcodes used to identify products in shops. It is a small graphic. Here is an example.

Just as shops have barcode readers, QR Codes need readers. These are apps or software which are downloaded to a device and used to scan the QR code with the camera on the device. The most common use is to scan the QR Code and be taken instantly to a website. Try this with the QR code above. On an iPhone or iPad you will need to download an app such as QR Scanner, and run it. Point the camera at the QR Code and you should be taken to the Naace website. QR Codes really come into their own on handheld devices such as tablets and smartphones, where the device will have cameras and a web browser integrated into its use. QR Codes can also be read on laptops and desktops.

Key Concepts

QR Codes can take you to anywhere which has a **URL** (web address). So for example, they can go straight to YouTube videos, dropbox locations, google map locations, and so on. This is because the QR Code does not only contain specific information such as the URL, but also information about what application the information should be used in. So the device 'knows' that the URL should be loaded into a web browser, for example.

QR Codes can also be used to link to phone numbers, text messages, or even plain text, and the device will use these in the appropriate application.

QR Codes only contain a limited amount of information (~3kb) so they are too small to contain embedded sounds. However, they can link to sounds lodged in a URL. Some QR code generator services will provide hosting for sounds.

QR Codes contain their own **error correction** so that they can be scanned at different angles and sizes, and as images they can be blurred and still be scanned. They can also be different colours, and have a range of different colours within them. This allows teachers, by using colours, to organise and store their QR Codes, which by their very nature do not indicate what information they might lead to.

The easiest way to **generate** a QR Code is online on a PC or Mac. There are lots of free sites which do this (see teacher resources below). They will either ask for a URL, or ask for the sort of information you want to store. Once this is entered, the QR Code is generated and can then be downloaded as a graphic image. Free generators will allow you to select a colour for the QR Code, and possibly designs using the QR Code.

QR Codes can also be generated on the device itself. For example, there is an app called QR Reader which allows this. The free version includes advertisements; these can be removed by a payment.

Key Outcomes

- Accelerated learning through efficiencies, by automating many common digital processes
- Accelerated learning through increased engagement and motivation
- Control over access to web sites
- An opportunity for pupils and teachers to be creative with digital media and communication
- A powerful justification for using handheld devices.

Here are some examples.

Childline

Location of the Tower of London

Plain text

Audio

Email to Naace

Key Methodologies

Because a QR Code is a graphic, it can be presented both in print and electronically in almost any size.

Some ideas for teachers:

- On the screen, put up a QR code for all the pupils to scan, and take them to the same website. This is really useful when a search might 'give the game away'. Try this one, and see how long it is before the pupils work out it is a spoof website.
- On a piece of paper, or in a shared online document, create QR Codes to a range of selected websites, to remove the need for searching, and control access, as with this publication.
- Use QR Codes which generate sounds to provide access to those whose reading level is limited.
- If your pupils have a Purple Mash or J2E account, their work will have a URL. This will allow you or them to create QR Codes which link directly to their work.
- QR codes are excellent for making interactive displays. Where in the past you may have lifted a flap to find out 'What life was like for an evacuee' you can now have QR codes on your displays that take pupils straight to appropriate websites. Other ideas for displays are to use QR codes to link to videos or images of artwork on which pupils' work has been based.
- Many schools now have Perspex signs both around school and on outer school walls. As a QR code is just an image, it is as easy to have a QR made in this way, as it is any other picture. Placing QR codes on outer school walls is a great way to get parents to visit your school website, see the latest news on your social media account or link to local authority terms dates.
- QR codes can also save a lot of time in terms of classroom preparation. Many teachers spend several hours of the summer holidays creating laminated VCOP pyramids, handwriting styles, calculation policies etc. By simply creating a QR code to these resources and sticking it on to the pen pot in the middle of the table, or the desk itself, pupils can quickly link to a range of useful resources. You can also do this with your behaviour policy or playground rules and have the QR code mounted on the back of the classroom door. If there have been any incidents you can get children to scan the QR code and remind themselves of the rules.

Some ideas for pupils:

Use QR Codes
- and plain text to label a collection.
- on parents' night to show off your work.
- to make a celebration card with more to it.

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Both teachers and pupils get full control over the use of QR Codes when they are able to make their own websites or blogs. Here the content of the blog or website can be planned with the QR code in mind.

Here is an example which integrates an interesting online tool with QR code access. Padlet (formerly Wallwisher) is a free online tool which can be used for sharing ideas. The tool provides you with an electronic wall on which users can pin sticky notes. Users access the electronic wall via a URL. Teachers make and control walls, and distribute the URL, so that users can click on the wall to pin a note. Every user sees all the notes pinned. The teacher can regroup the notes, remove them, and generally manage the interactions. The issue with this imaginative classroom tool is accessing the wall via the URL. This can be automated with a QR Code, thus substantially improving Padlet as a classroom tool. Try using a Naace wall now.

There are many more ideas on YouTube, including a good account of the motivational effect of QR Codes.

Teaching Resources

www.padlet.com

Examples of services which provide URLs for pupil work

http://primaryblogger.co.uk/ (free)

www.j2e.com

http://www.purplemash.co.uk/

Examples of QR Code generators online:

http://www.qrstuff.com/index.html

http://www.qr-code-generator.com/ (need to register but hosts sounds)

Some Apps

QR Reader, QR Scanner, QRafter

Naace has produced this series of Essential Guides, or "eGuides" in response to an identified gap in teachers' CPD. That is, how to use technology creatively and effectively to make significant impacts on learning and standards in other curriculum areas.

Naace believes that technology has a major role to play in raising standards in learning across the curriculum, provided teachers know how to adapt their pedagogies in order to maximise the potential gains offered by learning technologies.

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For further information contact: naacepde@naace.co.uk

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Having read this "eGuide", you may wish to register with The Naace Open Badge Academy for Open Badge CPD accreditation