Barcodes in the Classroom

Barcodes are everywhere. You're probably used to seeing them on just about everything you purchase. A special type of barcode, called a Quick Response (QR) code, is becoming more popular in print advertisements, on websites, and even on billboards. In this workshop, we will take a look at some ways to create QR codes, use them in the classroom, and also view other interesting barcode technology that you can use in your everyday life.

QR Code readers

QR codes are typically scanned using applications installed on a mobile device such as a cell phone or tablet computer. Reader applications for Mac and PC computers are available, but are more difficult to use than mobile apps. Several mobile phone manufacturers now pre-install QR code readers on new devices, but others may require you to download an app. Luckily, there's no shortage of QR code readers n the various app stores - simply search for "QR code reader" and you'll find something for just about any device that had a camera and the ability to install third-party software. Please feel free to get in touch with me if you need help finding a reader for your particular device.

What are QR codes?

Overview Videos - either scan the QR codes to the left or visit these URLs for some introductory videos!
http://goo.gl/TGdkx OR http://goo.gl/bP8ll

A quick response (QR) code is a special type of two-dimensional barcode designed to be quickly read by a camera-equipped mobile device or computer. The codes, as seen in the example above, are typically made of a series of black squares on a white background. The codes can contain several types of information and, once scanned, enable the user to complete some sort of action. Common actions include:

- Viewing text information
- Visiting a URL
- Viewing a media file
- Calling or texting a phone number
- Sending an email
- Accessing/downloading contact information
- Much more . . .

So how are they used exactly?
QR codes are often used to bridge the gap between the physical and electronic worlds. For example, a company may place a QR code in a magazine or billboard advertisement. Anyone viewing the advertisement that wants to learn more about the product or service being offered can pull out their phone, take a picture of the QR code, and view a mobile website with all sorts of additional information. A textbook publisher may include a QR code that links to supplemental multimedia files for a tough concept or topic. Students who need the extra assistance could scan the code with their mobile device and to access the information. A newspaper or journal article might use a QR code to link to a frequently-updated web page when information in a story is likely to change after publication. As you can see, the possibilities are endless!

How much does it cost to create/use QR codes?
Luckily, unlike some other types of barcodes, anyone can make or use QR codes for free! We'll learn more about making QR codes in a few minutes, but for now let's take a look at some ways you might want to use QR codes in your class!

How it works
Let's take a look at a few examples of QR codes in action to see how they're typically used to bridge the physical and electronic worlds!

Demonstration - Best Buy

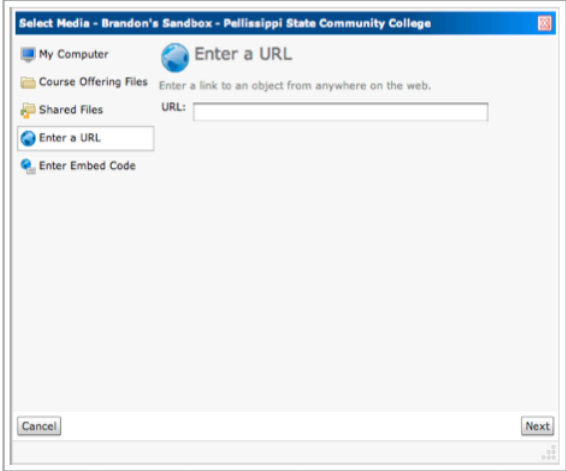
Watch it - http://goo.gl/wKafs

Best Buy recently introduced a mobile app that allows customers to compare two products by scanning their QR codes. In addition, you can scan the QR code of an object to view additional information, watch videos of the product, and more.

Demonstration - Enhanced Worksheets/ Handouts

Watch it - http://goo.gl/kIqpD

This video shows how one educator adds QR codes to worksheets to link to supplemental videos.
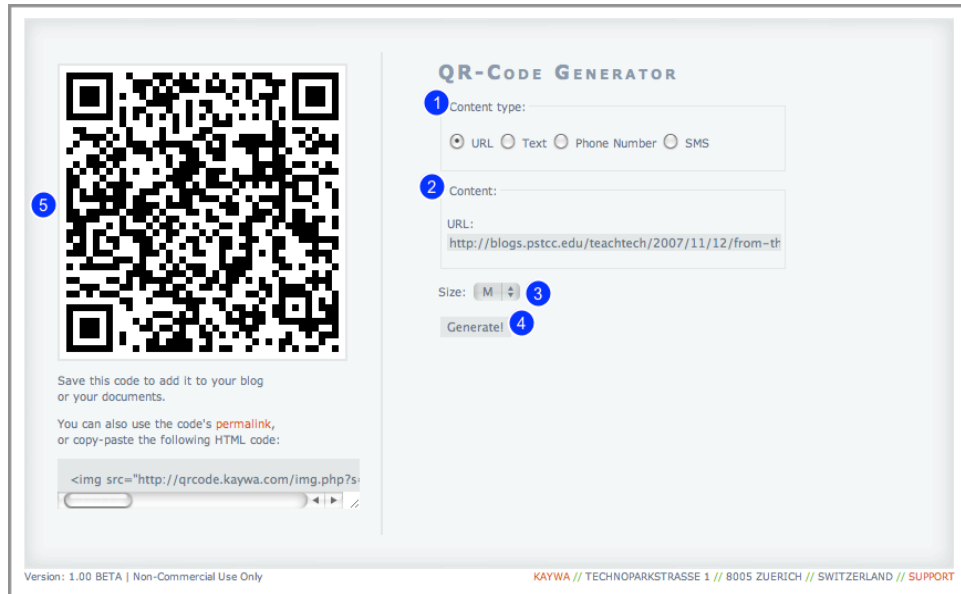
Potential classroom uses

Here are some other examples of potential uses for QR codes in the classroom.

- Easily link to a web page without having to type or write out the entire URL. Imagine trying to type a link to a particular location on a Google map; your URL could be dozens of characters long!
- Create classroom polls - www.twtpoll.com
- Add QR codes to handouts and PowerPoint slides that link to supplemental information.
- Create QR code stickers that can be added to textbooks or lab manuals.
- Allow students to explore physical objects using QR codes. For example, you could print and stick QR codes

to anatomy models or classroom equipment and allow students to scan the objects to learn more.

For additional ideas, you may want to check out this Google Docs presentation.

How to make your own QR codes using the Kaywa Generator

There are many free (and paid) ways to create your own QR codes. In this tutorial, We'll just look at two of them. if you're interested in exploring other methods, please feel free to get in touch with me!

Kaywa QR Code Generator
The Kaywa generator website allows you to create a code in several different resolutions (good for print and web use) with 4 different content types - URL, Text, Phone Number, and SMS (Text) messages. The service is free for non-commercial use. To get started, simply:
1. Head over to http://qrcode.kaywa.com/
2. Choose a **Content Type**. In this case, let's link to a blog post on the PSCC Blogs site, so I'll copy the URL from that post into the URL field.
3. Choose a size. if you're showing the code on a computer screen, the small (S) or medium (M) size should be just fine. if you're going to include the code in a document

intended for printing, it's best to use one of the higher resolutions.

4. Click on the **Generate** button.
5. You'll now see your code embedded on the page. Right click and save the image to your computer and you're all set!

How to make your own QR codes using Google's URL shortening service

Google offers a free URL shortening service that automatically generates QR codes and has some nice tracking features as well. You may have seen similar URL shortening services before. The basic idea is that you copy and paste a long URL, say a link to a Youtube video or Google map, and the service creates a shortened version of the URL for you, which is much easier to share. Copy the URL from the address bar of the site you'd like to share with your class.

1. Access Google's shortening page - http://goo.gl/ and paste in the URL you just copied.
2. Click on the **Submit** button.
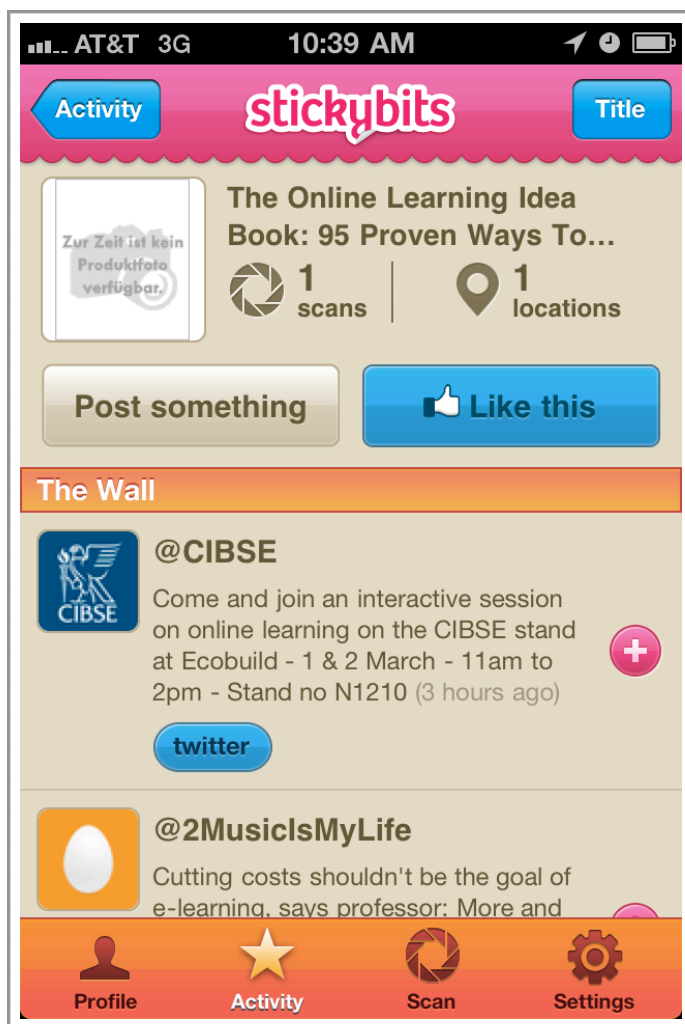3. Click on the **details** link for the entry you just created.

4. Right click and save the QR code in the upper right corner of the page.

You may also notice that Google collects statistics on each short URL that you create. This can be a great way to find out if students are actually using the codes that you create!

Other uses for barcodes

Now that we've seen how to use QR codes in the classroom, let's take a quick look at some other mobile apps/services that you may find useful!

Adding even more interactivity using the StickyBits

In the examples we've discussed so far, the creator of the QR code is responsible for attaching the actual content to the link (whether that's a link to a website, YouTube video , etc.). But what if you could create a code and allow your students to participate in the discussion by uploading their own pictures, audio clips, or videos? Imagine, for example, adding a barcode to a handout that would allow students to post their own responses or solutions to a problem. Well, that's exactly what a service called StickyBits let's you do!

Scan just about any barcode using the Stickybits mobile app (available for iOS or Android devices) to see what other users of the service have uploaded to it. You'll typically find reviews, discount coupons, etc. You can also create your own post from within the app that will appear to other users who access the product's wall. To see how this works, try scanning one of the QR codes in the left margin using the Stickybits app. Instead of taking you to the video, you'll see the barcodes Wall, where you can post your own comments.

Once you've created an account, you can even create and download your own unique barcodes to use in presentations, documents, or webpages. Keep an eye on the promotions as well. Some companies, for example, may offer free products or discounts when particular codes are scanned!

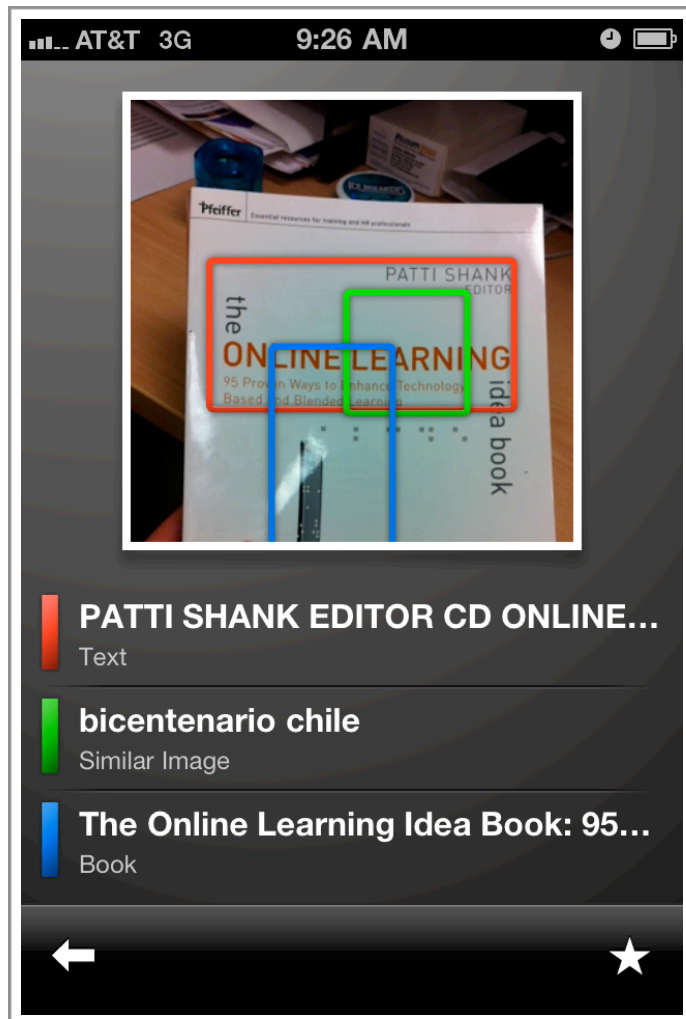Read more about stickybits here.

Amazon

The Amazon mobile app allows you to scan a barcode to load Amazon's product page for a product. From there, you can access information about the product, view pricing options, read reviews, etc.
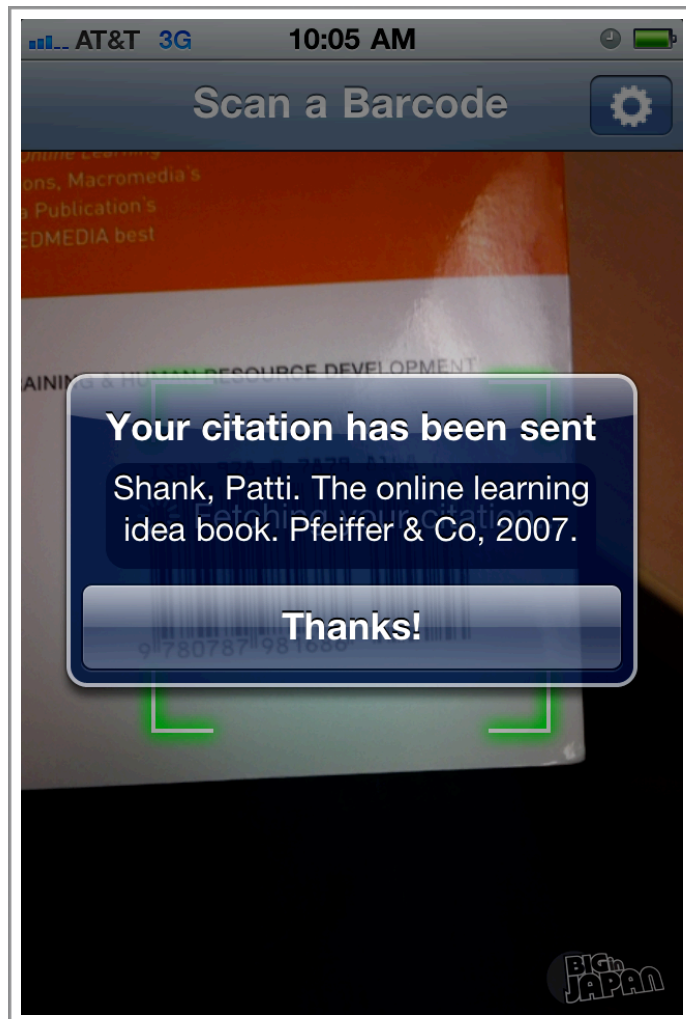
Download this app from the iTunes app store.

Google Goggles

Google Goggles, part of the Google Mobile app, allows you to take pictures to search the web. Goggles works with text, landmarks, books, and more. Snapping a photo of a book cover, for example, will allow you to find more information on the author as well as the book itself. As you can imagine, the search results are not always perfect, but book covers seem to work especially well!

[Find out more about Google Goggles!](#)

QuickCite

QuickCite, available for $0.99, gives you a quick way to collect citations by scanning a book's barcode. In the app's preferences, provide your email address and the type of citations you would like to receive. Then, scan the barcode of any book and receive an email with your citation. I've used plenty of barcode scanning apps before and was surprised at the speed and accuracy of this application.

View QuickCite in the iTunes App store.