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Bridge Over Troubled Water: QR coding the collection for student satisfaction

1.1 Background and context

Since 2012, BU (Bournemouth University) library have been highlighting available, relevant e-books by embedding QR codes in our printed book collection. This chapter will focus on the drivers and intended outcomes for the project and will discuss the characteristics of successful QR campaigns that we have considered to achieve our aims. A more practical discussion of project implementation is in press at the time of writing (Ford, 2013).

1.2 Bridging the gap between traditional skills and digital literacy

In an increasingly digital information landscape, we believe that digital literacy and student satisfaction are closely linked. Over the past decade, BU has invested heavily in e-resources, which has vastly increased the consumption of library information. Annual e-book views have increased exponentially to over 2.5 million, however feedback suggests that not all students use e-resources to support their learning.

We attribute this, at least in part, to the information seeking behaviour and digital literacy of some students. We encourage students to search our online discovery tools for the *full* range of print and electronic resources, but techniques like visiting the library and browsing the shelves are still prevalent (Korobili, Malliari, & Zapounidou, 2011). Despite a collection of over 100,000 e-books, limited availability of electronic *textbooks* continues to drive visits to the print collection. Discovery of print books through shelf browsing depends on how *the library* has classified the books. Classification is highly subjective (Keshet, 2011) and materials are not always grouped according to the concepts students relate to.

Comments like “buy more copies of up-to-date books!” for subjects well covered by our e-book collections, suggest that some students assess library coverage of their subject on what they see on the shelves. We were therefore keen to encourage those students not finding physical books to develop the resilience to explore digital alternatives.

1.3 QR codes bridge the physical/ virtual divide

Towards the end of 2011 we explored QR codes for this purpose. QR codes are two-dimensional graphical codes that encode a string of characters. Commonly this is a URL that takes users to a web page in the browser of the device used to scan the code. The proliferation of mobile internet devices has increasingly led to use of QR codes in marketing (Tolliver-Walker, 2011) where they are thought to have potential as a “bridge between offline and mobile media” (Okazaki, Li, & Hirose, 2012, p.102). QR codes are often misused in marketing campaigns (Charlton, 2013; Eden, 2013). Following attendance at a JISC funded workshop on QR codes (Knox, 2013), we made efforts to ensure that our project met the conditions required for a successful QR code campaign.

1.4 User group

Firstly, we asked whether we had a user group that would use QR codes. Educause recently estimated that two-thirds of college students owned a smart phone (2011) and later highlighted increasing numbers of students owning smartphones and tablets and using them for academic purposes (Dahlstrom et al., 2012). We are thought to be entering a “post-modality” era where technology is challenging traditional notions of learning environments, enabling an “anytime, anywhere” approach to learning (Dahlstrom et al., 2012, p.7). Research at BU estimated that 75% of our students own a smartphone (Tedd, Wardle, & Heppell, 2012). More generally, use of QR codes is predicted to mature into wider adoption over the coming years (Gartner, 2011). As technology infiltrates the lives of our learners it may offer us opportunities to construct learning using devices, media and skills that our students already have (Beetham, McGill, & Littlejohn, 2009; Trinder et al. 2008).

1.5 Mobile content

Failing to provide a *mobile-enabled* target is a common failing of QR campaigns. Users are frustrated by web pages that are not designed to be viewed on mobile devices (Edwards, 2011). In light of the varying usability of academic e-book platforms on mobile devices (Lam et al., 2009) we wanted our QR codes to direct students to useful and usable mobile content. Fortunately, this coincided with the launch of a mobile interface to our online catalogue (Capita Prism) (Westwood, 2011). The mobile interface displays catalogue search results optimized for mobile browsers, showing students what e-resources are available whilst they are in the stacks. It also gives them a list of resources that they can view later from devices better suited to reading.

Incentive and user motivation.

Figure 1.1 BU QR Code sample

Scan to your
smartphone



Or visit...

<http://delivr.com/1kc2r>

...in your web browser
to find ebooks on:

Systems Analysis

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Only a small number of QR campaigns include any incentive for users to scan the code (Okazaki et al., 2012, p.106). We wanted to capitalize on BU students' motivation to find books relevant to their units of study, so we grounded our project in unit reading lists.

Analysing materials on reading lists determined the subject area of the unit. We then constructed searches for e-books relevant to that subject. Given that students can struggle with matching subject headings to search terms (Bates, 1977), we believed that recognising the name of their unit would be an important factor in motivation to scan the code. We therefore followed the nomenclature of units of study on our labels. Similarly, we wanted students to see QR codes in the areas where they would most likely be searching for books. We used the shelfmark of the core textbook listed on the unit reading list to locate the QR code.

1.6 Code design and usability (size, data density and readability)

QR code design can have a profound effect on how easily they are to scan. We used black and white images to ensure high contrast for minimum processing time (Liu, Yang, & Liu, 2008). Producing the code graphics as large as possible on our labels and surrounding them with "white space" makes it easier for the device to interpret the code (Ward, 2011) and easier for users to locate the code in their phone's viewfinder. The density (or number of pixels) in the code also affects how easy it is to scan (Kindberg, 2007). We used URL shortening to reduce the number of characters in our catalogue search URLs and therefore the code density. This also gave us a shortened URL that could be printed on our labels for those without smartphones.

As well as the technical aspects of usability, we also took measures to ensure that our labels were simple, clear and accessible. For example, we implemented changes to our proposed colour and font following consultation about accessibility with our Additional Learning Support department.

1.7 Environment

Environmental conditions like lighting and internet access can affect the user experience (Liu et al., 2008). Although most devices can now store the results of a scan for later use (Eden, 2013), we felt it

important for students to be able to see available e-books whilst at the shelves. Fortunately, Wi-Fi access in BU libraries was recently enhanced by a significant programme of IT infrastructure improvement, so we were confident that there would be a good user experience over Wi-Fi. The mobile interface we were directing users to employs caching of data to optimize search speeds in low bandwidth environments, such as 3G (Westwood, 2011). In order to test the user experience, we created prototype QR codes and scanned them using a range of devices and from various positions in the library.

1.8 Conclusions

It is too early to fully evaluate the impact of our project on student perceptions of availability of material, however we can tell that the codes are regularly being scanned and have also received positive comments from students and academics. We conclude that with an appropriate user group, “mobile-friendly” content, user motivation, and consideration for design and the library environment, QR codes offer potential in signposting library users as we transition from printed to increasingly digital media.

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