

QR-Code Based Access to OERs and SLMs for ODL Students

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1.0 Introduction

As mobile learning is becoming popular, the student support services (in ODL) can be provided using some effective tools. One such tool is the QR Code. The full form of QR is Quick Response. It is a matrix code created by Japanese Corporation Denso-Wave in 1994, which is quick, scannable barcode like image that redirects to a specific digital destination like a link to the webpage, mobile number, email, bookmark link, an advertisement campaign, a University website, business cards, a musical site, podcasts etc. There are two things involved. One is the generation of the QR Code using any QR Code generator and the other thing is an app that reads these generated QR Codes. The QR Code is meant to allow its contents to be decoded at high speed (Denso ADC, 2011). There are plenty of freely available QR Code generators and QR Code apps to download for Desktop, Android and Apple.

In the next section the methodology is explained, later on the applications of the QR codes is listed, and in the further section, the list of QR Code generators and readers for web based and for mobiles are discussed. In section 1.5, actual implementation part is described, followed by the conclusions.

1.1 Methodology:

In this paper, the authors attempted to generate QR Code for the Open Educational Resources and self-instructional materials available on eGyankosh of IGNOU, curated them and made available the same through a blog. The URL of this blog will be circulated among the Open and Distance Education students who have enrolled for this course to provide student support.

The whole procedure pertaining to generation of QR Code and delivery through a Blog is illustrated in this paper.

1.2 Application of QR-Codes

These QR Codes have immense potential and application in providing the support (Denso Wave, 2013) to Open and Distance Learners and conventional learners. The following are some of the applications of QR Codes:

- These QR codes can provide an alternative access format for students who need additional support in reading and writing. Using mobile devices, students can quickly gain access to the information by just scanning the QR code and without typing the URL of the websites.
- If a student needs to read the instructions for a task set by the teacher, scan the QR Code created for these instructions using a mobile device and to listen use a text-to speech app.
- To provide information, hotspots throughout the classroom to access online videos, websites, text that is related to your syllabus and instructional material.
- To give link to your course material
- To suggest some additional Open Educational Resources (OERs).
- The student can view his/her assignments, daily schedules etc. by scanning the respective QR code.
- The student can access eBooks, Self Instructional Material, Programme Guides, and Old Question Papers etc.
- It can be linked to Flipped Classrooms.
- A QR Code can be sent to the parent to view his/her wards progress.
- To view some YouTube videos on courses or to watch from the digital archive/ repository.
- To link QR Code to hear a book talk.
- Linking up the updated Wiki

There are several QR Code Generators (Joe Waters, 2015) and QR Code Readers available for free. Let us study these in the next section.

1.3 QR Code Generators:

There are many online websites, mobile device creators and desktop tools available to create required QR Codes. The list is given below:

1.3.1 Web-based and Desktop Tools:

Following are some of the web-based desktop tools to generate QR-code:

- Kaywa.com QR code generator
- QRStuff (create a color QR Code)
- GoQR.com
- SnapVu (includes URL shortener and scan tracker)
- Bulk QR Code Maker
- QR Code Scanner
- SnippQR
- Scanova QR Code Generator
- Delivr (can change the URL to where a QR Code leads)
- goqr.me : no log-in or extension needed
- QRCode Monkey : QR Code with logo
- Qrcode-generator.com
- I-Nigma

1.3.2 Mobile device creators:

Some of the mobile device QR code creators are as shown below:

- Barcode Generator (Android OS)
- Qrafter QR Code Generator (iOS)
- QR Code Maker (iOS)
- QR Code Generator (Android)

1.4 QR Code Readers:

In order to scan and read the QR code, Desktop Readers, Mobile Device readers / Apps are required. Some of the free readers / apps are given below for desktop and mobiles:

1.4.1 Desktop Readers:

Following are some of the web-based desktop QR Code readers:

- QRreader for Desktop (Adobe Air app)
- QuickMark QR Reader for Mac
- QuickMark QR Reader for PC
- Code Two for Windows
- QR Journal for Mac

1.4.2 Mobile Device Readers:

Following are some of the mobile QR Code readers:

- Kaywa.com QR code reader
- NeoReader

- Qrafter QR Code Reader (optimized for iPad)
- i-nigma reader
- Barcode Reader (Android OS)
- QRDroid (Android)
- QR Scanner (iOS)
- QRReader (iOS)
- AT&T QR Code Scanner (iOS, Android, Blackberry)
- i-nigma
- QR Code Reader (Android)

In the next section, the implementation of QR-based access to the OERs using a Blog is described.

1.5 QR-Based Access to the OERs Concept to Practice-Implementation using a Blog

As a pilot, we had implemented this QR based access for providing support to MCS-011 Problem Solving and Programming course of MCA first semester. We selected the course from first semester of IGNOUs MCA and implemented using the page designed on Blogger.com. First, we had collected the URLs of all the OERs available on eGyankosh, a digital repository of Indira Gandhi National Open University (IGNOU) for the course, like the course material, programme guide, videos, lab manual etc. Then opened the browser and visited a link <https://www.the-qrcode-generator.com/> to generate free QR Code as shown in figure1.

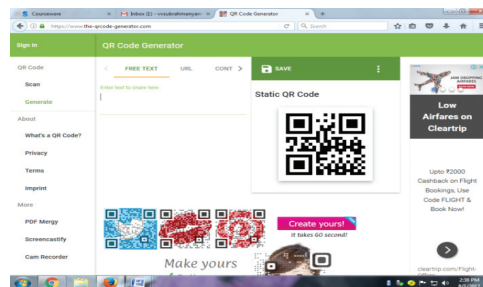


Figure 1: QR-Code Generator (Source: www.the-qrcode-generator.com)

For all the collection of URLs of OERs, we generated corresponding QR Codes as for example, shown in the figure 2 below. On the menu, it has several options like Free Text, URL, Contact, Phone and SMS. Also on the right side it has a SAVE button with various options like SIZE (50x, 100x, 200x, 300x, custom).

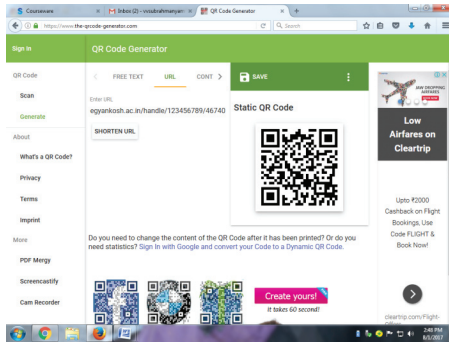


Figure 2: Generating the QR Code for the OER

After generating the QR codes for all the OERs, opened my blog account in www.blogger.com and prepared a page on the course covering all the resources available including the Course material, Programme Guide, Old Question Papers, Lab Manual, Videos, eBooks etc along with their generated QR codes as shown in figure 3.

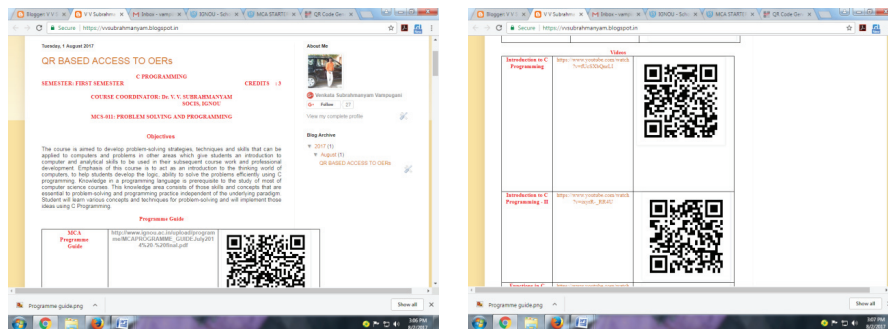


Figure 3: Blog showing the list of OERs and corresponding QR Codes

The blog with URL <https://vvsbrahmanyam.blogspot.in/> is shared with students through website, twitter etc. The learners can download a QR code reader and can view the OERs as shown in the figure 4 below. They can directly visit the links, watch the videos, download the eBooks, view the lab manual, go through the course material, programme guide etc.

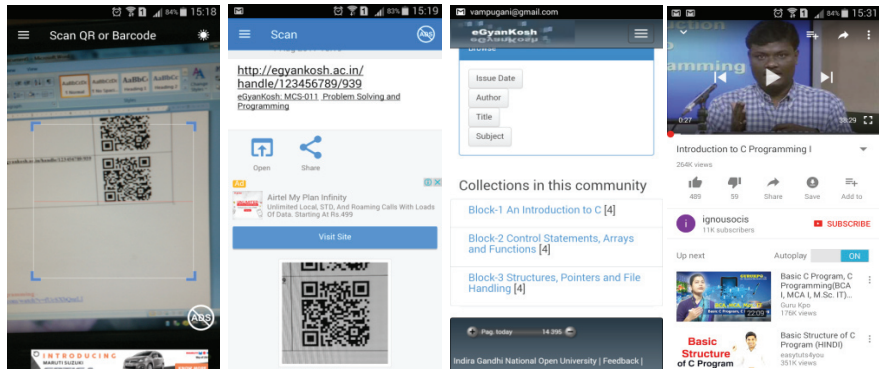


Figure 4: Viewing the OERs using Mobile Phone

The viewed URLs can be bookmarked for future reference.

2.6 Conclusion:

In this paper, we implemented the QR based access to the OERs through Blog. QR Codes can hold over 4000 characters of information. Instead of printing out long guidelines to our students, QR Codes could give them direct and instantaneous access to the same resource in class or at home. We can save time. We have seen that they are very easy to generate. To create a QR code the requirement is to copy and paste the address of a web page into your QR generating software. Once you have produced your code, you can then transfer it to your teaching resource, or simply leave it on the interactive whiteboard for students to scan in class. QR codes can be printed on virtually anything. The authors are further working on flipped classroom model for ODL students and wish to provide the resource material through QR based.

2.7 References:

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- Joe Waters. "How to Use the Top QR Code Generators". Dummies.com, 2015.
- QR Code Readers for iPhone, Android, Blackberry and Windows Phone 7
- Beware of Malicious QR Codes, ABC. 8 June 2011. Archived from the original on 2012-08-01. [Retrieved 1 August 2017].

Web Resources:

- www.the-qrcoder.com
- www.i-nigma.com
- www.blogger.com
- <https://vvsbrahmanyam.blogspot.in>