QR Code and Useful Applications in Libraries

Dr. Margam Madhusudhan
Associate Professor
University of Delhi
QR Code

• The QR (Quick Response) code is a type of 2D barcode.
• They are sometimes referred as 2D codes, 2D barcodes, mobile codes & also known as a Matrix code
• Anything can be converted into coded information and present it for quick and access for later
• It can be decoded at high speed and from any direction or any position detection patterns
1D & 2D Barcode

1D Barcode
A barcode is a series of bars and spaces arranged according to a set of rules that determines how data is to be represented.

2D Barcode
Stored data in a non-linear fashion, such codes are known as two-dimensional code.

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<td><img src="image" alt="Code 39" /></td>
<td><img src="image" alt="Code 128" /></td>
<td><img src="image" alt="EAN-13" /></td>
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<td>PDF417</td>
<td>DataMatrix</td>
<td>Maxi Code</td>
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<td><img src="image" alt="DataMatrix" /></td>
<td><img src="image" alt="Maxi Code" /></td>
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Anatomy of Barcode and QR Code

Anatomy of a Barcode

Linear information
Numbers only
Maximum Capacity: 20 digits

QR Code Data Capacity

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<th>Type</th>
<th>Capacity</th>
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<tr>
<td>Numeric only</td>
<td>Max. 7,089 characters</td>
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<tr>
<td>Alphanumeric</td>
<td>Max. 4,296 characters</td>
</tr>
<tr>
<td>Binary (8 bits)</td>
<td>Max. 2,953 bytes</td>
</tr>
<tr>
<td>Kanji, full-width Kana</td>
<td>Max. 1,817 characters</td>
</tr>
</tbody>
</table>
Figure 1: Structure of QR code

Types of QR Codes

- Micro
- Frame
- IQR
- SQRC
- QR Code Model 1 & 2
Types of QR Codes

There are five different types QR Codes: QR Code model 1 and model 2, Micro QR Code, IQR code, SQRC code and Frame QR Code:

- **QR Code Model one and Model two** are the typical types of QR codes which are considered as main structure of QR code for other types.
- **Micro QR Code** is type of QR code which has main feature as one position detection pattern and it has reduced size of printing.
- **IQR Code** is QR code which is present in both square and rectangular shape so that it can easily be printed on cylindrical products too. It stores more data in less space as compared to regular one.
- **SQRC** is full formed as Secure Quick Response Code hence it provides security to encoded data by providing reading restriction to it.
- **Frame QR** codes are the QR code which has canvas area for providing different shapes to QR code and making it more attractive to users and customers.
QR Codes

Static

- Once this type of code is generated then, we can’t change the code again
- One time job

Dynamic

- Editable
- We can change the information according to the change of time and need
How to Read a QR Code?

1. Mobile Smart Phone
2. Mobile Camera
3. QR Reader App
4. Point the Camera on QR code
5. Read/Browse the Content
The Change Agents

• Quick Response (QR) code is one such technology which can cater to the user demand of providing access to resources through mobile.
• QR code is a convenient way to add the virtual to the physical and capable to store variety of information: Text, Hyperlinks, Phone numbers, SMS/MMS messages, Email addresses, Maps, Calendar Information in any direction that is horizontally and vertically.
• Mobile Tagging is one of the trends on the mobile front.
• It is a process that allows users to access digital content on their mobile devices via an encoded object.
• Libraries are implementing QR codes in both their physical and online libraries.
• Application of mobile technology in library services is the need of the hour.
### Benefits of QR Code

1. It's fast
2. Store huge amount of data
3. Use anywhere
4. No specific skill is required
5. No additional technology is required
6. Use the information later
7. Anyone can generate it
8. Increased customer satisfaction
9. Environment friendly & Saves the paper
Generate QR Codes for...

- Website URL
- YouTube Video
- Image File
- PDF File
- Google Maps Location
- Twitter
- Facebook
- LinkedIn
- Instagram
- App Store Download
- iTunes Link
- Dropbox
- Plain Text
- Telephone Number
- Skype Call
- SMS Message
- Email Address
- Email Message
- Contact Details
- Digital Business Card
- Attendance Tracking
- Event (VCALENDAR)
- Wifi Login
- Paypal Buy Now Link

Many more...
Exponential Information

JUST ONE SCAN AWAY

Code Based Library Services
QR codes in Libraries

- Library Audio Tour
- Group study room scheduler
- Marketing/ Promotional materials
- Linking from print to electronic Journal Holdings
- Providing an electronic alternative to physical books
- Promoting online audio-visual materials
- Embedding video help
- Bringing external resources into the library
- Finding appropriate help
- Taking the catalogue record with you
- Seat Reservation
- Wi-Fi proper utilization
QR Code Applications in Libraries

Examples
Scan the QR Code for our Library Contact
Scan the QR code for our Library Website
Library SMS Notifications

Library Events

SMS
+919560978667
Lecture on Q R Code and Useful Applications in Libraries by Dr. M.Madhusudhan, Associate Prof. DLIS, University of Delhi on 10.10.2019 at 10 am in IIT Delhi
Scan the QR Code to our Facebook page
SMS Reference

• **Ask-a-Librarian** SMS service is offering mobile patrons the ability to text their questions to the Librarian.
Mobile Number
Website
Library displayed many titles on the shelves with QR code system and user can access these titles using QR code scanning by smart phone.
<table>
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<th>Title</th>
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<th>CD No.</th>
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<td>835-870</td>
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<td>1275-1326</td>
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<td>1052-1086</td>
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<td>Dr. Shivraj Kanungoo</td>
<td>830-834</td>
<td>5</td>
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<tr>
<td>7</td>
<td>CAD of digital systems</td>
<td>Prof. M. Balakrishnan</td>
<td>269-306</td>
<td>38</td>
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<tr>
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<td>Prof. S.C. Dutta Roy</td>
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Full Text Databases @ IITD Library
Quick Response Codes in University Libraries: User Expectations for Fast Retrieval of Information at the University of Delhi

Saleeq Ahmad Dar* and Madhusudhan Madh

1Research Scholar, Associate Professor, Department of Library and Information Science, University of Delhi, Delhi-110007, India
Email id: *mmadhusudhan@library.scu.du.ac.in; dar.saleeq@gmail.com

ABSTRACT
The study engages the survey approach to examine the user expectations at the University of Delhi. Through a structured questionnaire supplemented with a short interview, the data collected seek to understand the perceptions and expectations of the students for the implementation of quick response (QR) code in the Delhi University Library System (DULS). The findings of the study reveal that in the growing atmosphere of mobile devices in universities, it is time for libraries to make best use of QR code technology in their libraries by leveraging it in many library operations as discussed in this paper and later sensitize the patrons for its effective use in the retrieval of information. One more purpose of this study is to highlight the pros and cons of QR code technology in library settings. The findings of the study will certainly help the DULS, University of Delhi for effective use of QR codes for marketing its sources and services.

Keywords: Quick response codes, Two-dimensional matrix barcode, Mobile codes, Matrix code Delhi University Library System, University, Delhi

INTRODUCTION
QR stands for quick response that is a type of two-dimensional (2-D) matrix barcode that once scanned using exploitation sensible and web capable mobile devices/phones having camera, with QR Reader put in as default application, allows one to access some pre-written content such as a website address, email address, details of things within the catalogue, phone numbers etc. (Shetiar, 2013). In other words, QR code is capable to store information (numbers, texts, hyperlinks, contact details, calendar information, e-mail addresses, phone numbers, Short Messaging Service (SMS), maps, social network information and others) in any direction that is horizontally and vertically. One distinguished feature of QR code in comparison to the classic barcode is that it has

*Corresponding author
Bibliographic Databases
@ IITD Library
• Rapidly increased the demand of eBooks in educational communities.
• To easily access the eBooks by the users many libraries, publishers, aggregators are create and publish a QR code of book (title) so users can be accessed via these QR codes.
News Clipping Services
@ IITD Library

News Clipping Services

The Central Library has been compiling News Clips related to Higher Education/IITs/Academic matters from various e-sources/Google alert, etc. To access the news clippings click below given links.

Current Year News Clippings

- September 01-30, 2019
- August 01-31, 2019
- July 1-31, 2019
- May 25-30, 2019
- May 18-24, 2019
- May 11-17, 2019
- May 4-10, 2019
- April 27, May 3, 2019
- April 20-26, 2019
- April 14-19, 2019
- April 6-12, 2019
- March 30-April 05, 2019
- March 23-29, 2019
- March 16-22, 2019
- March 9-15, 2019
- March 2-8, 2019
- Feb. 23-1 March, 2019
- February 16-22, 2019
- February 9-15, 2019
- February 2-8, 2019
- January 26-Feb. 1, 2019
- January 19-25, 2019
- January 12-18, 2019
- January 5-11, 2019
- Dec 29, 2018-Jan 4, 2019
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<td>Jones &amp; Bartlett</td>
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Question Papers & Study Materials @ IITD Library

Help us in increasing the database by giving your Question papers and study material to the BSW Representatives. Or you can directly upload question papers by clicking the Upload.

Applied Mechanics (AML)

AML700
AML701
AML713
Digital Reference Service

• Digital library professionals setup a QR code based digital reference service platform to provide the fast and smooth library services on users mobile smart phone.
• In digital environment, it is very popular and beneficial to the users.
Scan to mail
Event QR Code

[QR Code Image]
Callouts

QR Code Callouts

HAVE A SMART PHONE?
SEARCH THE APP STORE
FOR "I NIGMA" & DOWNLOAD
THEIR AWESOME
FREE QR CODE
SCANNER!

TEST IT BY SCANNING THIS!
Book Polls
रणनीतीचे विश्व
(The World of Strategy)

- रणनीतीचे स्वरूप 2
- रणनीतीचा उपयोग कसा कराल 4
- तुमच्या क्षेत्रात रणनीती राखणे 6
- रणनीतीचे चार स्तंभ 8
- रणनीती आणि अनुभव म्हणजेच कला 9
- पॅराफोलिओं रणनीती 10
- तुमच्या कंपनीसाठीच चमुचाडी घेऊन तयार 12
- विविध विषयक काळजी 13
- नवीन कल्पना कसा साकारावरच्या 15
- रणनीतीची भाषा 16
- उद्योग कसा सुरू करावा 18

Marathi translation of MOBILE MBA by JO OWEN

ALWAYS LEARNING
PEARSON
namesake, Razia the Sultana. It was the poetry that held what had never become, Hafeez’s love for Razia, she thought, as the words on the page stared back at her like the stars that begin to form in the waters of a deep dark well. They smelt of a promise, of a beginning that beckoned like the morning adhan, holy and pure, in the hope it carried.

Avishek Parui is a doctoral candidate and tutor in the Department of English Studies, Durham University, UK, researching on cinema, nervous trauma, and the narratives of post-First World War English Literature. He has been awarded the British Council Certificate for Creative Writing Training in 2009. Winner of the Short Fiction Award, 2010 by The Platform Magazine and the poetry competition titled Journeys, he has published in various literary magazines and journals including The Groove, Humanities Underground and Pirene’s Fountain. He had featured in the annual Best Poetry Collection for 2009 and 2010 by Forward Press UK.
Public Health Research Methods

Qualitative Research in Applied Situations: Strategies to Ensure Rigor and Validity

"N. Nikkeeran, Sanjay P. Zodpey"

Associate Professor, Indian Institute of Public Health, Gandhinagar, Gujarat, Director, Public Health Education, Public Health Foundation of India, New Delhi, India

Summary

Traditionally, qualitative studies are founded on interpretative and constructive epistemology. The process of data collection in these studies is longer and intensive. This helps to build a strong rapport with the community, hence analyzing to capture the feel as naturally as possible. These characteristics provide an ample scope to take care of quality and validity of data. However, in applied situations, data collection is often a truncated activity. This robs away a number of taken-for-granted strengths of traditional qualitative research methods. No time is spent in rapport building, holism is left behind, instead we engage in selection; we focus narrowly on specific phenomenon of concern, divorced from its context; analysis does not evolve out of an iterative process. In this paper, we aim to discuss some of the issues related to rigor and quality of such studies and strategies available to address them.

Key words: Applied qualitative research, Qualitative health research, Qualitative research, Theoretical sampling, Validity

Introduction

In a study, based on a "systematic sample of 100 trials, published in English from the register of the Cochrane Effective Practice and Organisation of Care Review Group", Simon Lewis and others find that 70 of them used qualitative methods along with the randomized control trials (RCT). From these 30 studies, they identified at least 11 "ways in which qualitative methods can be used alongside randomized controlled trials", thus highlighting the important role qualitative methods could play even in RCTs, considered as the gold standard in bio-medical research. At the same time, they also point out that the "rigor of qualitative studies undertaken alongside (these) randomized controlled trials is an important concern", and they identify "major shortcomings in many of these studies", including "lack of a clear justification for the qualitative approach used, inadequate descriptions of context, sampling, data collection, and analysis methods, little reflection on the researcher's role in the research process ... and insufficient evidence to support the claims made in the paper".

How do we address these issues of rigor and quality in these situations? It is encouraging to see an increasing use of qualitative methods in applied situations. A majority of applied qualitative studies in medicine or public health gets published in journals, meant for studies done with quantitative principles. Publishing in these journals not only requires a certain structure of writing but also a certain form of representing the reality and addressing evidence. There is also a trend in the direction of systematic reviews of qualitative studies. These aspirations introduce a number of restrictions on these studies in terms of design of the study as well as the structure of their publication. These restrictions are often compounded with limitations, stemming from limitations in funding and inappropriate use of computer based software for analysis. Equally, we see extensive use of implementation and program evaluation techniques and
Print Journals/Articles with QR Code

- Publisher prints a QR code on journal and on every article which is included in it.
- User can scan the QR code and directly go to the same journal website where user can view/read issue/article in full text.
Digital Reference Service

- Digital library professionals setup a QR code based digital reference service platform to provide the fast and smooth library services on users mobile smart phone.
- In digital environment, DRS is very popular and beneficial service to the users.
Scan the QR Code to receive details of your

Subject Librarian

Sociology
Pauline Murray

To receive the information by text
To link to Pauline’s subject page
Use your phone to view our
“Guides to using the Library”

QR (Quick Response) Code is a type of barcode. When you scan or read a QR code with your iPhone, Android or other camera-enabled Smartphone, you can link to web pages, receive information contained in the code as text format to name but a few functions. You need to download and install a QR Code reader application on your mobile phone and this will enable you to scan the barcode, which will then link you to the information.

Scan the QR Code to link to the guide via Youtube

Renew library material online
Off-campus access
The library catalogue
Library orientation video

If you require help or further information, contact library.info.services@nmu.ie or tel. 01 709 0946

THE LIBRARY
AN LEABHARLANN
LIBRARY EXHIBITIONS

Scan here to learn more about Pádraig Ó Duinnín!
The Library is changing

On Friday 8th April work will commence on a temporary entrance to the Library. We would like to inform users of the following:

- All PCs in the multimedia area on the ground floor will be inaccessible from Friday 8th - Tuesday 12th April
- From Monday 11th April, access to the Library will be via the new temporary entrance

The Library would like to apologise for any inconvenience caused by these works.

http://library.nuim.ie/about-us/NewLibraryBuilding
QR Code for Promotion of Library Collections
Create digital “way finders” in the stacks

Source: http://lib.byu.edu/sites/qrcodes/

Source: http://goo.gl/bGz1y
Geo Location of Maulana Azad Library, AMU, Aligarh
QR CODE GENERATORS
Steps for creating QR code

1. Navigate to a specific QR code generator or use your favourite search engine to find one.
2. Select the type of data you want the QR code to encode.
3. Type or paste in the data requested by the generator.
4. Generate the QR code.
QR Code Generators

- BeeTagg (www.beetagg.com);
- Google QR Code Generator (chrome.google.com/webstore/detail/qr-code-generator/)
- I-nigma (www.i-nigma.com)
- Kaywa (http://qrcode.kaywa.com/)
- QRCode Pro (www.qrcodepro.com)
- Neoreader (www.neoreader.com)
- Nokia Barcode Reader (mobilecodes.nokia.com/)
- RedLaser (redlaser.com)
- Snapmaze (http://mobile.snapmaze.com/jar)
- Scanlife (www.getscanlife.com)
QR Code Generators

- QR Droid (http://qrdroid.com/generate)
- QuickMark (www.quickmark.cn/)
- Qurify (www.qurify.com/es/)
- Qurify (http://www.qurify.com/en/)
- Upcode (www.upc.fi/en/upcode/)
- Zxing (code.google.com/p/zxing/wiki/GetTheReader)
- http://goqr.me/
- http://www.qr-code-generator.com/
- https://www.the-qrcode-generator.com/

• Many more in Commercial & Public Domain
Benefits of QR Code Applications to Library Service

- User Friendly
- Ability to Access Information
- User Participation

- Personalized Service
- Time Saving
- Location Awareness
- Limitless Access
Conclusion

• Another vehicle for code based information
• Bridge from physical to the digital world.

QR Code

Library
• Libraries in Hand trend
• Access the library resources with simple a scan of a code
• Increase ROI both Print and online collection

Services
• One Scan away for exponential Information.
• Open the door for information on the go
Further Readings


Acknowledgement:

• Thanks to all the authors/ universities/websites/Libraries, who’s original works are cited/created/used in the form of images, QR codes (QR code Pro & QR Stuff & others) and screenshots in this presentation for better illustration/understanding and also for academic purpose only.