

Application of QR Code Technology in Academic Libraries: A Case Study of Adarsh College of Arts, Commerce and Science, Kulgaon-Badlapur

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Abstract: This action research study explores the use of Quick Response (QR) technology to deliver library services to the Adarsh college community. In the ICT era, library professionals provide both web-based and mobile-based services to users. Specifically, this research investigates the implementation of QR code technology - a three-dimensional barcode system - to enable mobile-based library services.

This study highlights various library services, including a library blog, access to old question papers, a list of library resources, Book Bank service, Current Awareness Service, and new arrival books service. While you may be familiar with traditional one-dimensional barcodes on everyday items, Quick Response (QR) codes are now seeing increased adoption in the corporate and education sectors. These QR codes enable mobile payment methods like Google Pay and PhonePe. Libraries are also utilizing QR technology to promote their services, making this an increasingly popular technology in the 21st century.

Key word: Quick Response Code, Bar Code.

1. INTRODUCTION

QR (quick response) Codes, a type of barcode, are beginning to make inroads in the United States. They are still largely unknown, but early adopters in higher education and recent urban promotional campaigns are changing that. As with any new technology, it is important to understand what they can do and when they can help our users.

QR code is a matrix barcode readable by smartphones and mobile phones with cameras. They are sometimes referred to as 2d codes, 2d barcodes, or mobile codes. On most phones purchased in the United States, one must download a free app (application) in order to read the QR code, although some phones have one preinstalled.

The QR code typically appears as a small white square with black geometric shapes, though colour and even branded QR codes are now being used. QR codes can hold much more information than a regular barcode. The information encoded in a QR code can be a URL, a phone number, an SMS message, a V-card, or any text. They are referred to as QR because they allow the contents to be decoded at high speed. QR codes were developed in 1994 by Denso-Wave, a Toyota subsidiary.

QR code abbreviation is Quick Response code read or access information with the help of smart phone or similar devices. It stores huge information in the small space. Today's information technology era needs more information stored in small space. QR codes are mostly printed on newspapers, mobiles and the products etc. Incorporate more companies use QR codes for marketing of their product.

Type of QR code:

Usually, five types of QR codes are available. These are QR code model 1 and model 2, micro QR code, iQR code, SQRC and frame QR code. Frame QR code is more advanced type of QR code with canvas area where available space for inserting other thing for promoting as you like. Static and dynamic are two type of QR code where dynamic QR code is editable anytime even after printing.

Functioning of QR Code

A QR code is a two-way dimensional square-shaped barcodes that comprise many black square dots on a white setting. There are mainly four kinds of data such as numeric, alphanumeric, byte or binary and Kanji which are encoded into information or through supported extensions. The processor locates the three distinctive squares at the corners of the image, and normalises image size, orientation, and angle of viewing, with the aid of a smaller square near the fourth corner. The small dots are then converted into binary numbers and the validity is checked with an error-correcting code (Wave 2011).

Need

Library is growing organism everyday increase collection of the library each and every book cannot see or know about book. All library collection coded in QR means in 2 dimensional code library users or community can scan QR code and download list of books in their device and check books which are books available in the library.

Interdisciplinary: QR code technology is used to all users. It is interdisciplinary use all stream students and teachers can access and used it for their study, research work and entertainment etc.

2.Objectives

- To raise awareness of QR code technology.
- To promote mobile-based library services.
- To provide quick and friendly library services to library users.
- To provide library resources in 2-dimensional code.
- To save the time of users and staff.
- To promote awareness of the use of open-source technology.

Scope: This study scope is Adarsh College of Arts & Commerce, Kulgaon Badlapur .

3. Methodology:

Use descriptive methodology and case study of Adarsh College of Arts & Commerce, Kulgaon-Badlapur.

Use of QR code technology in Libraries

In 21st century libraries are fully computerized and they know about demand of the users. They always try to provide world class services to their users beyond physical boundaries. There are many libraries that have implemented QR technology. The names of some notable libraries are given below:

- Lafayette College Library
- Syracuse University Library Learning Commons
- Half Hollow Hills Community Library
- Contra Costa County Library
- Topeka & Shawnee County Public Library

With the advent of ICT and awareness of technology among people, QR codes are being used everywhere. So QR codes can be used in library for develop library product such as list of books, journals, CD-DVD and Maps etc. So we can say that QR code can be used in a variety of ways as per need. The main aim of using QR code is to give brief message to the users. There are several ways to use the QR code in Library environment

“Library Success: A Best Practices Wiki” has a QR Codes page and is one place where librarians and others can share and link to how their libraries are using QR codes. 5 The wiki provides a great way to find ideas and learn from each other.

Examples of QR code uses in libraries include:

- Library exhibits that include a QR code link to songs, videos, web blog, report, pamphlet and surveys etc. or other information that augment the exhibits.
- Codes in the library stacks/end caps or magazine/journal areas that point to online electronic holdings of print materials or related subject guides.
- Linking to library pamphlet to aware or advertise of Library.
- Code added to print handouts for additional information on mobile friendly sites.
- QR code with text that loads the library's text message reference service and other contact information into the patron's phone.
- Art shows or permanent art in libraries with a QR code linking to the artists' Web sites.
- In catalogue records to offer patrons basic info about an item, including the location and call number.
- Users can scan the code and head to the stacks rather than writing or printing.
- Taped to video/DVD cases, linking to mobile-friendly video trailers.
- Code placed on staff directory pages and research guides that go to mobile friendly sites for later reference.
- Code placed on audio book cases for author interviews or books for reviews.
- Code placed on study room doors connecting to room reservation forms.
- Library video tutorials—individual videos or create a QR code to a YouTube playlist of videos, which create a great mobile home screen app that can be saved for easy access, as needed.

4. About Adarsh College Library:

Adarsh College was established in July 1995 with the objective of facilitating Quality Higher Education to the students in and around Badlapur. The College imparts Education in Arts and Commerce Faculty and offers self-financing professional courses like BBI, BMS, BAF, B. Sc. (IT), B.Sc. general & BMM. The vertical expansion in terms of Post Graduate and Research Program has come into effect in the form of P.G. courses in M. Com and M.A. in subjects of Marathi, History and Economics. The college is recognized 'Research Center; for pursuing Ph. D. in Business Economics. College has near about 1400 students admitted for various courses.

Library also established in July 1995, it has rich and quality reference collection for readers. The college has a spacious Library well situated at ground floor of main college building. Library has a well light and well-ventilated separate reading hall for boys & girls.

The college library is the hub of learning with a collection of about 32,000+ books including 8948 general reference books, 95 Encyclopaedia, 64 National and International journals and magazines, and 281 CD/DVDs and collection of 32 Maps. Library has subscribed e-resources under N-LIST Program.

5. Library services:

Various services provided by the library the details are as follows: -

Sr. No.	Service	Details
1	Document Delivery	We have provided articles documents and information to students, teachers and research scholars which are related to their project report and research
2	Publishers Catalogues	Publisher's catalogues download through internet. Received by e-mail, post and sales executives, provided to the teachers for book selection and aware about new published books.
3	Periodicals (Reference Service)	We have provide special service to the research scholars & PG students. We provide research articles which has published in various journals. We make available back volume of various journals on demand of readers.
4	Book Review	Display book review on notice board which has published in newspapers, magazines and journals for book selection.
5	Clipping	We have display paper clipping on notice board related employment news, carrier guidelines articles and current topic articles for library readers.

6	Reference	We have display reference book list on notice board and provide information in that reference book as per reader's demand.
7	Book Exhibition	Display new books in new arrivals display rack
8	Internet	We provide information through internet on demand of readers.
9	WEB OPAC (Open Public Access catalog)	OPAC service provided to library readers for search book by Title, author, subject
10	Reprographic	Provide photo copy of necessary documents on minimum charges.
11	Content of Journals	We developed content of articles which published in subscribed journals. Research scholar can easily find out necessary article.

Now library newly started QR code service for library readers. QR code service provide for purpose of promote library service as well as save the time of users. Today mostly student has smart phone, they are using smart phone in their day-to-day life. So, library has developed QR code in the library. QR code products of Library as follow QR code:

- Library Pamphlet & weblog
- Subject wise list of books
- Old question papers
- All Book bank forms
- Library services
- Library membership forms
- E-mail service
- Library report

QR code panel display on notice board, website and issue counter for the scan. There is given title of item and collect information. Students demand of old question papers before QR code service we provide hard copy of old question papers that time only two three students could refer now students scan QR code of old question papers and download papers. Now save time and money of students. They solve and refer old papers at home and share to their friends.

Library users scan QR code of subject wise book list and download it. They are easy refer, read, find the books which books are available in the library and where is kept book in the library in which rack.



QR code of subject wise book list



QR code of content of journals

Above QR code scan will get all QR code file in PDF format of library product which developed by library staff. If you want economics subject's list of book scan QR code of economics you can download list of books and check which books are available in the library.

6.Conclusion:

Library is growing organism; every day more books, periodicals published in the world. Libraries has challenged of information explosion and development of various technologies. In this present ICT era, the new technology QR code developing and demands the changes of information handling in the library. The user would have easily accessed the current and important information handling in the library. So to make the effective use of QR code among the user community, library professionals must organise user awareness program, orientation programme, etc.

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