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Innovative Practices in Knowledge Resource Centre in Digital Era

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- Abstract -

Knowledge Resource center plays an important role in higher education. It is expected that their institution should introduce various Innovative practices to attract the students and use the library facility and services.

This paper introduces the meaning of innovation, types of innovation and the innovative practices adopted in Library in Digital Era.

Introduction

Innovation is Introducing or using new ideas, technique etc. In order to improve quality or to make Progress. Innovation is intensic to process persons having a passion to maintain quality and betterment. Privation is individual oriented. Not all have the innovative abilities thus quality can be brought by Innovation or adopting best practices. The overall objective of professionals is to improve the quality of services by assuring in change in the existing system and services. The therpigital Information age, we all need to learn how to effective and efficiently the huge diversity of Information communication technology for information search finding organization analysis and assessment Librarian need to innovative Services in partnership and reach to Various target group. There is no social development without libraries. In the present day libraries are at the Grass roads of development or decay librarians need to new technologies, desire the existing collection and select quality resources, which are scattered in different libraries and knowledge centers in the world. Information and knowledge technology are changing and becoming sophisticated day by day and knowledge resource Centre need to adopt them and providing better services to their users.

There is a vast gulf between new technology and library professionals for which needs to be bridge through dialogue, debates and exchanges between IT communication specialist and LIS Professionals.

Defination of Innovation

Lueckrand KaT2 (2003) defined the Innovation , Innovation is generally understood as the Successful introduction of a new thing to method, innovation is the embodiment combination, or Synthesis of Knowledge in digital original relevant, valued new products, processes or services"

Types of Innovation

There are four types of innovation, consequently the innovation has four pathways to Investing investigate when searching for good ideas

1. Product Innovation
2. Process Innovation
3. Positioning Invitation
4. Paradigm Innovation

Knowledge Resource Centre and Innovation

Adopting the innovation practices is the need of time and it gives number of genetics like creative Inspiration widening the horizon, innovation can dramatically affects performance, which leads to break through ideas that save time josprave Innovation can allow librarians to enhance their services contribute to organizational Improvements and sender quality products and services.

TCT Based Innovative Practices In KRC In Digital Era

1. **Computerised Library With Library Software :** Software consist of the Step by step innovations that tell the computed what to do. Many software packages for various applications in the field of library and Information services are soul LIBSYS LIBMAN, SLIM ere le for automation purpose.

2. **Online Publication Catalogue (OPAC) :** It is a computer form of library catalogue to access material in the library. It is an online database of materials hold by a library. It is a computerized library Catalogue available to public

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of the information of learners. They offer college students with experiential gaining knowledge of stories and involvement in a actual global revel in makes gaining knowledge of extra significant and everlasting.

Teaching – gaining knowledge of sources are used to make the coaching-gaining knowledge of technique powerful and interesting. These sources are used to make matters clean and simpler to understand. With using those sources, the surroundings of the study room will become livelier. Learners emerge as extra energetic and concerned whilst all of the senses of an person are getting used withinside the technique of gaining knowledge of. With the assist of the use of coaching-gaining knowledge of sources, sure pix associated with the subject being taught are created withinside the minds of learners. Thus, their potential to suppose and believe enhances .They discover it simpler to connect to what's being taught and are capable of maintain what they learnt for an extended duration of time. In today's time, numerous sources are getting used to sell powerful coaching-gaining knowledge of. Starting from using blackboards to multimedia sources, there was a first-rate increase and improvement withinside the sorts of coaching-gaining knowledge of sources. These sources may be grouped into "audio", "visual" and both "audio-visual". The audio sources are those which employ the auditory feel of the person a good way to sell gaining knowledge of. Individuals study with the aid of using listening to. So being attentive to radio, audio recordings, songs and so forth fall on this category.

Conclusion

In this paper, we defined the meaning, nature and scope of the area of Political Science. In order to make the coaching-gaining knowledge of of political technological know-how powerful, a trainer is needed to be aware about the diverse strategies of coaching Political Science .This paper additionally explains that a Political Science trainer is needed to hold her/his information upgraded approximately the diverse coaching-leaning sources that make coaching-gaining knowledge of of political technological know-how extra interesting. We additionally supplied how with converting instances and increase and improvement of technology, new coaching-gaining knowledge of sources are getting used withinside the technique of coaching.

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10. User Orientation Programme in Learning Resource Centre of Smt. V. N. Mahila Mahavidyalaya Pusad Case Study

Chhaya B. Jatkar
Librarian, Smt. V.N. Mahila, Mahavidyalaya Pusad.

Abstract

User education also called user orientation or user instruction. Teaches the user how to make the most efficient use of the library system and collection and services. Day by day user Orientation is becoming an important aspict of information work, on the use of information. Which becoming more and more complex, with the availability of tools, like internet and ICT based services. The technological development and new approaches information handing and the use of computers and other equipment have added a new dimension, to the problem of user. Thus has become very essential to educate and train the students to know about the existing information sources and services for more effective and efficient utilization of the library.

The present paper focuses brightly on the need and purpose of user orientation programme with a special case study of Learning Resource center in Smt. Vatsalabai Naik Mahila Maha. Pusad

Introduction

As you all know, every year at the time of admission in a college, their libraries get new members. The Libraries have a lot of resources-i.s Books, Journals CD's Maps, Thesis etc. They spent lot of money in acquiring and maintaining them. These resources are meant for the users. The new members cannot know on their own about the documents, collection and services available, location of various sections, staff members and how to retrieve information from OPAC etc. They need to be told about all these, To overcome this difficulty college libraries should provide the orientation to the users. In order to encourage the students to make maximum use of library. They need to be maid familiar about the environment of the library. User orientation is an important activity in libraries. It is all about educating the users on how to use the library and services offered by it.

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Smt. V. N. Mahila Maha. Pusad

Janta Shikshan Prasarak Mandal is renowned educational institute in pusad that aims to provide educational facilities to the community far and near in 1989. with the lead of Forme Chief Minister Late Shri Shudhakarao Naik, the college Smt. Vatsalabai Naik mahila mahavidyalaya has been established to provide higher educational facilities in the faculty of arts and Home Science. In the short span 29 years the college has shown qualitative as well as quantitative progress. Recently our college has been reaccredited in the third cycle of NAAC with 'B' grade. Speaking the truth the college gives an opportunity to

To the rural and economically backward students. It is the vision and mission of our college. to bring these girls in the stream of higher education and to make them competent to face the global challenges.

In the changing scenario of higher education. it become the need to train our girl students with this new concept of ICT enabled teaching and learning. Of course. the Learning Resource Center of this college is not exception Hence to guide and train our students about E-Learning resources and use of library has taken initiative to develop the awareness of our students among the major activities and the best practice of leaning resource center is 'User orientation programme.'

Defination

Teaching the use of library is called user orientation or library orientation. In feet the word orientation simply means familiarization or adjustment with a particular students, in this contest this familiarization and adjustment is with the use of the college library. Library orientation programme. In colleges uses methods that could help the students. To have full knowledge of the college library and its resources.

Flaming (1990) has defiend. user orientation "as various programme of instruction education and explosion provided by libraries to user to enable them to make effective, efficient and independent use of information sources and services to which these libraries provide access"

ALA Glossary of LIS defines user education...

'User education as the term which encompasses all types of activities designed to teach user. about library services facilities and organization library resources and search strategy. It includes in the use of transactions, library use presentation and bibliographic instruction."

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Aims and Objectives

- To create awareness and understanding of the basic and relevant. Library and information sources and services.
- To make students aware of availability and scope of library resources and services by the context of their studies.
- To contribute for the personal and intellectual development of students.
- To train the students in handing information products like printed forms and electronics forms.
- To the Bridge the gap between the user and the collection of the library

Need of User Drientation Programme

The Students of our college are come from poor families. majority of the students in the college come from village having agricultural. background where they have to work in farm and to pay their travelling charges and other fees, these students are not familiar and aware about the library. They do not have knowledge of how to use this reference sources It has been observed that the user have inadequate library skills which are required for navigating in the library and using the reference resources.

The user orientation is needed because of following factors.

Current Trends in Education

These days the concept of self-study and lifelong learning are very much emphasized. There is general perception that the user are capable enough to locate and retrieve the information they need. But in fact, the user need to trained and educated as to the use of information resources to meet their information needs.

Availability of Online Resources

The user needs to be made aware of the online resources subscribed by the library. They need to be told how to access and retrieve the desired. Information form them. They further need to be educated how to access the resources within and without the library.

Miscellance Services Offered by the Libraries

A library offers following miscellance services to the users to help and facilitate in their learning process.

- OPAC
- Lending

- Photocopying
- Internet Browsing
- Information about new arrivals
- Interlibrary loan facility.

Methods of User Orientations

Following methods are taken to orient the user towards the library:

Lecture Method: is the common and familiar method and very efficient way for communicating. It is the best practice of our college that on 15th August every year, in the general meeting of the students all the heads of major departments give the detailed information. In which the librarian address the students and faculty about library collection, library rules, facilities and services and best practices of learning Resource centre.

Power Point Presentation

Power point presentation is also one of the best methods for user orientation. Librarian has prepared PPT Presentation on user orientation programme for the students, and it proves very useful to know and understand the whole system of library function.

E-Mail

It is one of the common and popular communication media for user orientation. E-mail can familiarizing the library user regarding library resources.

Consclusion

Academic libraries are hub of knowledge for students and faculty. The aim of library is to serve the required information to the library users within a short span of time. Information technology and its application in libraries have changed the way of looking towards the libraries, by library users. Availability of information confused the library users to choose the relevant information. Librarian should educate library users to retrieve right relevant information. So it is

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necessary to do user orientation to the users of the library and acquaint them how best they can make use of the library by using latest ICT Skills adopted in the library.

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Use And Importance Of Barcode Technology In Libraries

Smt. Chhaya B. Jatkar
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Barcode have found verities of applications in different fields, including libraries and information centres. In developed countries barcode patterns become a familiar symbol for general masses due to appearance in all personal products, books, garments other records, etc. Barcode is not a very new technology, it had been as early as 1940s. Its first commercial application can be back to 1960s as a method for tracking railroads. In India bar codes are being used in various companies and the All India Radio as an automatic method of identification, many manufacturing industries and companies have been using barcodes. The application of barcode technology in circulation system of a library and information centre is most successful due to the speed, accuracy and reliability. This technology of automatic identification has found wide acceptance in the libraries and information centres.

What Is Barcode:

Barcode is a method of automatic identification and data collection. also known as the universal product Code (UPC) Barcode is use the library system for coding and decoding. Barcode technology plays are important role automating the functions of the library. Especially the circulation its application increased the speed and accuracy in operations. Barcode technology provider a simple and expensive method of encoding text information that is easily read by inexpensive electronic readers. Bar coding also allows data to be collected rapidly and with expense accuracy. A Bar Code.consist of a series of parallel adjacent bars and spaces representing dots ant wide bar representing dashes.

Need For Barcode Technology :

Library are going automated digitized now a days users have very less time to find out a piece of information from and entire consent so this technology is very important for providing quick and pinpointed information.

1) Keep up to date with the modern technical initiatives.
2) To improve access more quickly from inside the libary as well as from outsid
3) To improve working efficiency.
4) Cost saving.
5) Maintaining through Software is very easy.

Objectives Of Barcoding:

The major objective of bar coding in a library are as follows :-

- To achieve accuracy.
- Time saving of users.
- To reduce operational cost.
- Improve operational efficiency.

Basic Requirement For Barcode Application :

Implementing Barcodes in library application the following hardware and software are required.

- Personal Computer.
- Barcode Scanner
- Decoder
- Printer
- Printing Software
- Library Software
- Membership Database.

Application Of Barcode System In Libraries

Automation and networking of libraries are being done with a view to provide effective and efficient services to its users. A library is not fully automated, if this automatic metro of identification is not included

application a barcode system is principally quite suitable for circulation job of library besides, the job of tory and periodically control can also be effectively carried with the help of barcode technology

culation System

While a library exists, in modern age, to get the books used by readers, is only two sections of the ff- Reference section and circulation section. The circulation section, on the other hand, is in complete ge of the mechanics of use of books by the readers. In this respect, it is the performance and attitude of the culation section that largely makes or mars the reputation of the library. It is also necessary to fully eciate the usefulness of barcode based circulation system, good circulation system should answer most of llowing questions.

a) Whether a certain book has been issued or not ?
b) Which book have not been returned in time.
c) Statistics of the issued books.
d) Statistics of the returned books.

ntages Of Using Barcode Technology

- Increased Accuracy
- Increased the speed of operations.
- Increased user satisfaction and hence improve the image of the library.
- Fulfill Ranganathan's fourth law i.e. save the time of borrowers.
- Perfect Entry and retrieval of data.
- Improve information availability and data Integrity.

dvantages Of Using Barcode Technology

There are some disadvantages for using Barcode technology

- Maintaining is costly sometimes.
- Not possible without proper machinery.
- Not possible without skilled staff.
- Power cut problems.
- System fall down problems.

nclusion :

Implications of Barcode technology is one of the best techniques to minimize the time taken at the culation section. Bar coding by itself is not system but an identification tool. That provides an accurate and ely support of the date requirement for the sophisticated management systems Barcode uses increase curacy in the data collection, save time of the users and improves efficiency in various library operations. ery library needs the application of new technology to developed its existing methods this time thus saved n be utilized for developing advance and additional techniques in the library. It minimize errors and increase e efficiency at the of the circulation cost of climating book cards and books pockets. Barcode labels with both cession and call number on it can also be used as a book tag. Contribution of Barcode technology with mputer and Application Software Improves Performance And Efficiency In Various Library Operations.

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Role Of Libraries In Society

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ABSTRACT :-

Education is the backbone for the progress of any society. Libraries provide the crucial role in promoting education, research, personality development, ethics and other important values. A society connect flourish without proper education and the primary requirements of the education system is thebe knowledge available in the books. Libraries acquire books along with other reading materials organize them, preserve them and disseminate the informations to the users. Thus Libraries play an important role in development of society.

INTRODUCTION :-

A Society or human society has several different meanings. It refers to people living together in a community sharing common interest and may be having distinctive customs and institutions.

The term 'society' may also be used to refer to various distinctive cultural groups of people, Simply we may view society as an aggregate of individuals living together as inter dependant members in a highly structured systems of communities. The library play a fundamental role in our Society. They are the collectors and stewards of our heritage; they are organizers of the Knowledge in the books, they collect adding value by classifying and describing them, and as public institutions they assure equality of access for all citizens. They to use the knowledge of the past and present and lay it down for the future.

In ancient time libraries acted only at the custodian of books and. other written documents writings on clay, tablets, papyrus, paper etc. were preserved in those libraries. Libraries were existed at accommodation & personal collection of Kings, in temples and religious centers. There were limited accessibility to these collection only to the elite who were involved in acquiring knowledge had access to it.

LIBRARY AND SOCIETY

Library and society both are interlinked and interdependent. Library exists for the need of the society. A library can be referred to as a well acknowledge Social agency. It plays a vital role in Sharing our society. It transmits and disseminated the accumulated knowledge through books and other materials. The library is a social institution. Libraries form a vital part of the world's social and educational System. They are entrusted with the responsibility of carrying knowledge to the doors of those who require it, so that it can be -fruitfully utilized both by the educated and the uneducated masses Knowledge is available through books, films, recordings and other material to the people in all walks of life all library resources for their day to day life.

THE CHANGE OF SOCIETY

The library users are different types of children, adult, teenagers, senior citizens etc. The use of Internet accesses are online Source of Electronic books, E-Journals, E-paper etc. The communication Shared the electronic mail, social Network of facebook. Twitter linked etc. The sharing of ideas downloading and uploading youtube etc. Thus save the time of the reader in the library and get it the information.

ROLE OF LIBRARIES IN SOCIETY

Library is a learning institution that exists in our society from ancient time. It is a place where Interaction between human and information takes place and intends to satisfy the information and social needs. Libraries play a vital role for a nation by presenting its cultural heritage. In the modern age with the abundance of information libraries assist the society by maintaining and disseminating the relevant information as and when required.

The roles that libraries play in Supporting modern societies can be grouped under five Categories.

1) Higher Education
2) User education
3) Recreation

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4) Library as a place
5) Social and cultural

Library as a place has an attraction in itself as Library is used to run and organise academic, social, and cultural activities. Libraries serve as commonly Centers with creative spaces suitable for a number of activities such as organizing cultural activities to promote social harmony, Libraries collect practices, and conserve documents relating to socio-cultural aspects of the society for future Governments.

CONCLUSION

The Library professionals are today use of information and Communication Technology in various activities of the libraries. The library is a service oriented organization created to facilitate access to learning resource of basic knowledge preservation and dissemination of information, human Culture and civilization, They develop the various skills that are Promoting the library roles. The Internet has Connected many computer and developing the network technology at the right time we the right information of the readers.

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EDITORIAL

India has completed 75 years as an independent country in the year 2022. During this period we have taken a huge leap in development in almost all fields. The government has developed the education system in India to a great extent by accepting and considering the various recommendations of the constituted commissions and committees. These commissions forced the government to give special attention to libraries by giving positive recommendations regarding libraries. However, it is equally true that this has only been possible due to the continuous pursuit of various LIS organizations. At the time of independence, many universities started undergraduate and postgraduate courses in library science. After the rise of computers and the Internet, traditional libraries were replaced by computerized libraries. The rapid growth of ICT further transformed these libraries into digital libraries, paperless libraries and virtual libraries.

In the 21st century, the nature of libraries has changed according to the changing demands of their users. The changing nature of reading material also played a major role in this change. A study on the development of library, LIS education and LIS association in these 75 years after the status of independent India should be discussed and the future roadmap of these matters should also be placed before the youth working in the profession. Keeping this in mind, Maharashtra University and College Librarians Association(MUCLA) has decided to organize this conference in collaboration with Indian Library Assocition (ILA).

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Re-Engineering of Academic Libraries Issues and Trends

Dr. Chhaya B.Jatkar
Smt.Vatsalabai Naik Mahila Mahavidyala
Pusad

Abstract

We are in the electronic information age, where improvements in technology and re-engineering the global information industry is need of today. Technology is driving the information access and delivery seamlessly crossing all the borders. Emerging technological revolution is a wheel of library's transformation from traditional to virtual libraries. Tremendous changes have taken place in the libraries due to the advancement of Information Communication Technologies. In this transformational phase, the concept of reengineering has applied to the academic libraries to change its face drastically to cope up with the modern expectations of the library users. Re-engineering is the need of a day in all types of libraries to reduce the gap between user's expectations and actual services provided. In the paper, author has revealed the various challenges and the scope for reengineering in academic libraries in detail.

Keywords : Re-engineering, Academic Library, ICT tools, Library services, Open Access.

Introduction

Re-engineering which has been very popular in the business world in 1990's, is equally beneficial for libraries to redesign their services in order to provide pin pointed exhaustive information up to end users. Reengineering of library will be an aid in creating a new learning environment in libraries. This will enhance resources, facilities and services of the library. The adoption of the technological services and functioning style has changed the attire of the libraries. The 1990's have seen tremendous evolution of recent management techniques such as T Q M, Reengineering, and Six Sigma etc. Re-engineering involves redesigning key processes, while keeping customer at the centre of process of redesigning.

Chris D. Ferguson, (1997) calls for reengineering libraries "in ways that bring librarians and technologists together within a common service environment" to meet users' needs in a more effective manner. Reengineering is the term which used for such drastic change and dramatic improvement in cost, quality, service and speed. Reengineering has its own theory and practice.

Mornati, (2000) Says that 'Seeking quality in every aspect of library organisation has to become a permanent goal in order to keep a main role as information providers for our users. One the other hand, pressure for new services is forcing us to keep the rapid pace of change in the information world. Libraries have to join resources and to cooperate to be able to face the challenge of digital information and globalisation'.

While as per opinion of Davenport (1933) - "Reengineering is only the part of what is

necessary in the radical change of processes; it refers explicitly to the design of new process. The term process innovation encompasses the envisioning of new work strategies, the actual process design activity & the implementation of the change in all its complex technological, human & organizational dimensions.

Output of Re-engineering in Academic Libraries

Re-engineering is beneficial to academic libraries like;

- To improve library services, provide better library services.
- To minimize the library paperwork.
- To change the existing library procedure and adopt electronic environment in a traditional library structure.
- Rapid development and implementation of ICT in library.
- To cope the challenges posed by information explosion.
- To fulfil multidimensional information needs of library users.
- To redesign information services of College Library.
- To provide pin-pointed exhaustive information to the end-users of the library.

Trends in Library Re-engineering

The main objective of library reengineering is to cope up with the modern time and provide its users right information at the right time by making best use of technology. Websites to display their services and work, 24/7/365 access to libraries, computerized housekeeping work etc.

Following are some of the trends that can be seen in reengineered libraries:

- Development of Institutional Repositories
- Development of Libraries with Open Access Content
- Wi-Fi Libraries
- Remote Access to the Library Resources
- Links to Entertainment Media
- Commercial Document Delivery Service

Areas of Reengineering of Academic Library

Collection Development

In order to cope with the reengineering of Library Services, the library collection should built in digital format. It may include –

- CDs, DVDs, Microfilms etc.
- Online-Books, On-Line Journals.
- Online Databases.
- E-Reference sources.
- Membership with e-consortia

Library House Keeping Operations

The library housekeeping operations will be redesigned in the following manner.

- Automated Acquisition system.
- Automated Cataloguing system.
- Automated Circulation system.
- Automated Serials control system.

Library & Information Services and Products

In order to redesign these information services, of Information Technology may be used in the following way –

- CAS & SDI services by e-mail.
- Online Information Retrieval system.

- Organising Information Literacy Programmes
- Online Resource sharing.
- Institutional Repository.

Human Resources

Following steps may be conducted for re-engineering of human resources –

- To inform the library staff about the reengineering process, its need & impact.
- To inform the library staff about their roles & responsibilities in Re-Engineering process.
- Organization of motivation/study tours for the library staff.
- Organization of in-service training programmes for library staff in the computer laboratory of college.

Conclusion

Libraries hold very unique position both on academic campus and in society .The transformation of libraries is the need of today's digital era. In this technological advanced society, libraries have to keep such reliable, authentic, qualitative and expected information and the recent tools of ICT. Hence, reengineering of libraries is a right approach towards the development of libraries. The essence of reengineering of library is to provide better access of information resources to the user by applying five laws of library science given by Dr. S. R. Ranganathan. Academic libraries will always precious for the teachers, researchers and students. Now it's our turn to learn and make modern library. The questions like Can we make our services and tools more flexible, more personable, more fun, more accessible, and of high quality? Answers to these are the reengineering of libraries with updated and advance technologies

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हस्तलिखित ते ई-बुक

हितेश ब्रिजवासी • डॉ. तुषार पाटील

Prashant

लेखन साहित्य आणि पद्धती : एक दृष्टिक्षेप

– छाया बाबुराव जनकर
ग्रंथपाल, श्रीमती वत्सलाबाई नाईक महिला महाविद्यालय, पुसद, जि. यवतमाळ

भाषा हे मानवाच्या मनातील भाव, कल्पना, विचार व्यक्त करण्याचे एक प्रभावी साधन आहे. विचार संक्रमणाचे माध्यम म्हणून भाषेची निर्मिती झाली. मानवाने वाचाशक्ती विकसित करून भाषा निर्माण केल्यामूळे मानवाच्या विकासात भाषेचे मोठे योगदान आहे. भाषा सिद्ध केल्यानंतर मानव आपले विचार चित्राच्या रूपाने प्रकट करू लागले. चित्रलेखनात लेखनाच्या लिपीचे मुळ आहे. जसे सुर्याचे चित्र काढुन सुर्योदय सूचित करणे, दु:ख व्यक्त करण्यासाठी डोळ्यातून अश्रु टपकत असल्याचे चित्र काढणे असा हा अविष्कार होता. दगडावर खोदून वा कोरून चित्ररूप अविष्कार मानव करीत असे. चित्रांद्वारे आपले मनोगत व्यक्त करू लागल्यावर अशा चित्रातूनच चित्रलिपी व आजच्या लिप्या निर्माण झाल्या. विचार संक्रमणासाठी चित्रे काढण्यात येऊ लागल्यावर चित्रांच्या रूपरेखाच काढण्यात येऊ लागल्या व या रेखाच विशिष्ट शब्दांच्या प्रतिक बनल्या अशा खुणानांच लिपी म्हणतात.

मानवाला आपले विचार ग्रंथित करण्यासाठी जी जी साधने उपलब्ध झाली व सोयीची वाटली ती ती वापरून त्याने लेखनास प्रारंभ केला, ती साधने म्हणजे दगड, मातीच्या विटा, बांबुच्या चिरफळ्या, झाडाच्या साली (तालपत्रे), पाने (भुर्जपत्रे), पपायरसाची पापुद्रे, धातुची पत्रे व कमावलेले कातडे इत्यादी होत. यासर्व साधनांमध्ये उत्क्रांती होत होत शेवटी कागदाचा वापर होवू लागला. या विविध वस्तुंवर लिहण्यासाठी वेगवेगळे साधने वापरली जात असत. जसे, छिन्नी, दाभण, पक्ष्यांची पिसे, बोरू, टाक ही लेखनाची साधने होती. दिव्यावरील काजळी धरून व अन्य पदार्थापासुन तयार केलेली शाई लेखनासाठी वापरीत असत. लेखनकला व लिपी यांचा जसजसा विकास होत गेला, तस तसा ग्रंथाच्या स्वरूपात बदल होत गेला. ग्रंथाचा इतिहास एकप्रकारे मानवी संस्कृतिच्या विकासाचा इतिहास होय. कोणत्याही राष्ट्राच्या वैभवात ग्रंथ निर्मितीस फार मोठे महत्वाचे स्थान आहे.

शाई, लेखण्या, कागदासारखे पट इत्यादींचा लेखन साहित्यात समावेश होतो. अलेक्झांडरच्या स्वारीत 'निआर्कस' नावाचा गृहस्थ भारतात आला होता व भारतात त्या काळी लेखनासाठी कागदाचा वापर होत होता असा उल्लेख केला

आहे. कालीदासांच्या ग्रंथात उल्लेखीत तालपत्रे व भुर्जपत्रे हीच भारतातील ग्रंथ साधने होत. क्षेमेंद्रांने आपल्या लोकप्रकाश नावाच्या ग्रंथात झाडाची पाने, लेखणी व शाईच्या दौती यांचा उल्लेख केलेला आढळतो. बौद्धकाळात तक्षशिला, नालंदा, विक्रमशिला या विद्यापीठात भुर्जपत्रे व ताम्रपत्रावरील हजारो ग्रंथ संग्रहीत करण्यात आले होते.

भारतीय लेखनकलेच्या प्राचिनत्वाविषयी एकमत नसले तरी लेखन साहित्याचे उल्लेख फार प्राचीन पूरातन काळापासुनचे सापडतात. मानवाने लेखन करण्यास सुरूवात केली तेव्हा त्यांची साधने ही त्या त्या परिस्थितीत उपलब्ध असलेल्या गोष्टीच असल्या पाहिजेत. त्यांच्या लेखनाच्या स्वरूपावरूनच साधने ठरत होती. आज लेखनाचे प्रमुख साधन म्हणुन कागदाचा वापर होत असला तरी कागदाचा वापर अलिकडे होवू लागला. लेखनासाठी मानवाने विटा, पाषाण, धातू, लाकुड, झाडाची पाने, खापर बांबु, चामडे अशा सहज उपलब्ध होवू शकणाऱ्या वस्तुंवर लेखन केल्याचे आढळून येते. समेय्यित लोकांनी दगड उपलब्ध नसल्यामुळे मातीच्या विटा ओल्या असतानांच त्यावर टोकदार साधनाने कोरून लिहित असत व त्या विटांवर पुस्तकांच्या पृष्ठक्रमांकाप्रमाणे क्रमांक देत असत. ख्रिस्त जन्मापर्यंत विटांवरील लेखनाची परंपरा चालूच होती. विटांप्रमाणेच दगडावर किंवा तांब्याच्या पत्र्यावर कोरून तयार केलेले ताम्रपटही आज आढळतात. यासर्व धातुंपासून लेखन होत असले तरी मानवी इतिहासात कागदाच्या अगोदर ज्या वस्तुचा वापर होत होता ती म्हणजे 'पपायरस' (Papyrus) या शब्दांवरूनच इंग्रजी पेपर (कागद) हा शब्द आला आहे. पपायरसचा उपयोग सर्वप्रथम इजिप्तमध्ये सुरू झाला. इजिप्तमधील नदीच्या परिसरात पपायरस नावाचे लव्हाळ्याच्या जातीची ही वनस्पती मोठ्या प्रमाणात उगवत असे या वनस्पतीच्या खोडाच्या लांब लांब पट्या काढीत व त्या जवळ-जवळ ठेवून त्यावर दुसऱ्या पट्यांचा आडवा थर ठेवीत व ते दोन्हीही घोटून एकजीव करून गुळगुळीत करीत व त्याचा लेखनोपयोगी पृष्ठभाग तयार करीत असत. १२ ते १६ इंच लांबी रूंदीचे तुकडे एकत्र जोडून गुंडाळे तयार करीत असत. गुंडाळ्याच्या टोकांना लागडी कळा बसविण्यात येई. कळांना पुस्तकांचे नाव असलेल्या चिठ्या अडकविलेल्या असत. पपायरसावर लिहलेले स्पंज वा ओल्या कपड्याने पुसून त्यावर पुन्हा: लिहता येत असत. पपायरसाचा वापर ११ व्या शतकापर्यंत चालु असल्याचे आढळुन येते.

तालपत्र

दक्षिण भारतात प्रामुख्याने तालपत्राचा लेखनासाठी उपयोग केला जाई. तालपत्राचा उपयोग करण्यापूर्वी तो वाळवीत नंतर पाण्यात उकळून काढुन पुन्हा

वाळवीत. पानाला गुळगुळीतपणा येण्यासाठी शंखाने अथवा दगडाने घासून ते योग्य आकारात कापत असत. तालपत्रावर लोखंडी अणकुचीदार सुईने टोचून अक्षरे लिहीत नंतर त्यावर कोळसा अगर शाई लावीत. तालपत्रांच्या पोथीला मध्यभागी गोल छिद्र पाडून त्यामध्ये दोरा ओवून लिहलेले सर्व पाने एकत्र बांधीत.

भुर्जपत्र

कागदाचा शोध लागण्यापूर्वी भुर्जपत्राचा लेखनासाठी वापर केला जात असे. भुर्जपत्र हे भोज नावाच्या वृक्षाच्या सालीचे नाव आहे. या सालीचे पातळ पातळ पाने करून त्याचा लेखनासाठी वापर करीत असे. देशातील पुरातत्व संग्रहालयांमध्ये पांडुलिपीमध्ये लिहलेले हजारो दाखले सुरक्षित ठेवण्यात आले आहे. कालीदास यांच्या ग्रंथामध्येही भुर्जपत्राचा उल्लेख केलेला आहे. भारतीय लोक लेखनासाठी भुर्जपत्राचा वापर करीत असल्याचे सिकंदरासोबत आलेल्या क्यू करिअर्स ह्या सेनापतीने नमुद केलेले आहे. संस्कृत वाङ्मयामध्ये भुर्जपत्राचे कितीतरी उल्लेख आहेत. बक्साली येथे सापडलेले अंकगणिताचे पुस्तक आठव्या शतकातील असुन ते भुर्जपत्रावर लिहलेले आहे. पुणे येथील भांडारकर प्राच्यविद्या संशोधन केंद्रात भुर्जपत्रावरील १५ व्या शतकातील पोथ्या आढळतात.

चर्मपट

पपायरस टिकावू नसल्याचे त्याचा वापर चालु असतानाच लक्षात आले होते. त्यामुळे टिकावू अशा वस्तुंचा शोध चालु झाला होता. कातड्याचा उपयोग करण्याची कल्पना यातुनच पुढे आली. टिकावूपणाच्या दृष्टीने जनावरांची कमावलेली कातडी लेखनासाठी वापरण्यात येवू लागली. इजिप्तमधील इ.स.पू. चोवीसाव्या शतकातील कातड्याच्या लेखनाचा नमुना उपलब्ध झाला आहे. १२ व्या शतकात ज्या ज्या ठिकाणी विद्यापीठे स्थापन झाली त्या त्या ठिकाणी लॅटीन व ग्रीक भाषातील ग्रंथाच्या नकला करण्यासाठीही कातड्याचा वापर करण्यात येई. समुद्र उत्खननात मातीच्या रांजणात ठेवलेले कातड्याच्या सुरळ्याचे ग्रंथ सापडलेले आहेत हे ग्रंथ ख्रिस्तकालिन असावे असा तज्ज्ञाचा अहवाल आहे.

ताम्रपट

शिलालेखाप्रमाणे प्राचीन काळात ताम्रपट अतिशय लोकप्रिय असल्याचे दिसुन येते. बुद्धविहारात ताम्रपत्रे असल्याचा चिनी यात्रेकरू फामियान याने उल्लेख केलेला आहे. ताम्रपटांचा लांबट चौकोनी आकार वैशिष्ट्यपुर्ण आढळतो. राज्यशासनाची तीन पत्रे असली तर पहिल्या पत्राच्या आतील बाजुस मजकुर लिहीत. वरची बाजु तशीच ठेवीत. मधल्या पत्रावर दोन्ही बाजुनी लिहत असत. तिसऱ्या पत्रावरील बाहेरील बाजुस लिहीत असत. त्यामुळे लिहलेला मजकुर सुरक्षित राहत असे.

ताम्रपटावर शाईने किंवा कोळशाने लेख लिहत नंतर छणीने ते लेख कोरीत असत. सोने, रूपे या धातुप्रमाणे तांबे दुर्मिळ नसल्यामुळे ताम्रपट लेखनसाहित्य म्हणून लोकप्रिय झाली.

सुवर्णपत्र

प्राचीन काळी श्रीमंत सावकार आपला कुलवृतांत, महत्त्वाच्या घटना सुवर्णपत्रावर लिहीत असत. सुवर्ण दुर्मिळ असल्याने सुवर्णपत्राचे नमुने फारसे आढळत नाहीत.

याशिवाय लोखंड, कासे, पितळ या धातुंचाही प्राचीनकाळी लेखनासाठी वापर करीत असत. पितळी घंटावर आजही देणगीदारांची कोरलेली नावे दिसून येतात.

शिलाग्रंथ

अशोकाचे शिलालेख हे महाराष्ट्रातील सर्वात प्राचीन शिलालेख होत. अशोकाचे हे लेख ब्राम्ही लिपीत व प्राकृत भाषेत कोरलेले आढळतात. भारताच्या वायव्य भागात आढळलेले लेख आस्माइक भाषेत खरोषी लिपीत आढळतात. दगडावर लेख लिहण्यापूर्वी तो गुळगुळीत केल्या जाई. त्यावर काळ्या शाईने अथवा खडूने मजकुर लिहीत नंतर कोरक्या छणीने खोदून तो मजकुर पक्का केला जाई अशा तऱ्हेने लेख लिहणारा विद्वान, अक्षरे वळणदार काढणारा आणि कोरण्याचे काम करणारा अशी तीन माणसे शिलालेखासाठी लागत. शिलालेखामध्ये लेखाच्या आरंभी किंवा शेवटी मंगलचक्र स्वस्तिकासारखे चिन्ह असते. तसेच इष्ट देवतेला वंदन केलेले असते.

इष्टिकाग्रंथ

पाश्चात्य संशोधकांनी १९ व्या शतकात आशियामध्ये केलेल्या उत्खननात इ.स.पू. सातव्या शतकातील असरवनिपाल या ॲसिलियन राजाच्या ग्रंथालयातील विटांवरील ग्रंथ उपलब्ध आहे. पाच इंच लांबीच्या अर्धवट ओल्या असलेल्या विटांवर दाभणासारख्या कोरणीने कोरून लिहले जाई व या विटा उन्हात किंवा भट्टीमध्ये वाळवून कडक केल्या जात. एका विटेवरच्या सर्व पृष्ठभागावर लेखन पूर्ण न झाल्यास एकापेक्षा जास्त विटांवर लेखन पूर्ण केल्या जात असे व त्या विटांवर पृष्ठक्रमांक घातल्या जात असत.

बांबुच्या चिरफळावरील ग्रंथ

इ.स.पू. १३०० मध्ये लाकुड अथवा बांबुच्या चिरफळ्या करून त्यावर लिहलेले ग्रंथ चीनमध्ये उपलब्ध होते असे मानले जाते.

कागद

चिनी इतिहासातील नोंदीप्रमाणे कागदाचा शोध इ.स. १०५ साली त्साई लून यांनी लावला. पुढे ही कला भारतात आली. काश्मिरामध्ये १२ व्या शतकातील आणि गुजरातेत १३ व्या शतकातील हस्तलिखीते सापडत आहेत. भारतीय लोक सुती चिंध्याचा लगदा करून कागद तयार करीत असत असे नमूद केलेले असून हातकागद तयार करण्याची कला भारतीयांनाच अवगत होती. या कागदाला तांदळाची खळ लावून शंखाने घोटीत असत. अरब व्यापाराद्वारे याचा शोध भारतात व युरोपमध्ये पोहचला.

शाई

प्राचीन काळापासून लेखनासाठी शाईचा वापर झाल्याचे दिसून येते. शाई तयार करण्यासाठी पिंपळाच्या डिंकाची बारीक भूकटी पाण्यात मिसळून व ती मडक्यात घालून उकळीत असत नंतर त्यात टाकणखार मिसळून फडक्याने गाळून घेत असत व त्याची वस्त्राने गाळून पुड करीत व ती गोमूत्रात उकळून शाई तयार करीत असत. त्या शाईने लिहलेले मजकूर पाण्याने सुद्धा जात नसे.

संदर्भग्रंथ सूची

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