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Original Article

Knowledge Management and its Application in Library Sciences

Chanderkanta Sood*, D.S. Chaubey**

Abstract

The management of information has long been regarded as the domain of librarians and libraries. Librarians and information professionals are trained to be experts in information searching, selecting, acquiring, organizing, preserving, repackaging, disseminating, and serving. However, professionals in information technology and systems have also regarded information management as their domain because of the recent advances in information technology and systems which drive and underpin information management. One of the clearest evidences of this is that the positions of "Chief Information Officer" (CIO) in many organizations are generally held by information technologists instead of librarians. In fact, most of the work of CIO's has to do with developing and managing the IT infrastructure and systems, not the managing of information per se. With the growing interest in knowledge management, many questions have been raised in the minds of librarians regarding: the difference between information and knowledge; between information management and knowledge management; who should be in charge of information and knowledge management; would librarians and information professionals with appropriate education and training in library and information science be most suitable for the position of "Chief Knowledge Officer" (CKO) in their organizations; and what libraries can do in implementing knowledge management. Present paper is an attempt to study the different dimension of knowledge management and its application in library sciences.

Keywords: Preserving;**R**epackaging;Disseminating;Knowledge management;Chief Knowledge Officer.

Introduction

Knowledge is the full utilization of information and data, coupled with the potential of people's skills, competencies, ideas, intuitions, commitments and motivations. Knowledge is an intellectual capital when people out of creation, add value to Information. In dictionaries, the meaning of knowledge is "familiarity gained by actual experience, practical skill and acquaintance or "intellectual experience with perception of truth" or merely "acquaintance with facts Dr. Ranganathan has defined the Knowledge as "totally of ideas conserved by humans.

1. Davanport (1998) defined knowledge as follows: Knowledge is fluid framed experiences, values, contextual information as expert insights that provides a framework for evaluation and incorporating new experiences of information. (prolegomena section CR21) So, we say that in our daily life. We use the term Knowledge to denote one of the following: - Acquaintance; Example; I know Ram. This again may mean two things:
2. (a) I can recognize Ram; or (b) I know some facts about Ram.
3. Belief: Example God live in heaven and immortal.

Capability: Example: I know singing. Here, by knowing I do not mean that I know some facts about singing. Instead I mean," I am capable to sing." Rhyle has pointed out that

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by our knowledge, we may also refer to our capabilities (Gilbert Rhyle: The concept of Mind, London, Rutchinson & Co., 1949, p.133).

Information

The process for knowledge creation and use as a continuum where data transforms into information, information transforms into knowledge and knowledge drives and undergoing behavior and decision making. Information is visible, independent from action and decision, different in format after processing, physical product, independent from existing environment, easily transferable and duplicate.

Knowledge is invisible, closely related to action and decision, different in thought after processing, spiritual product, identified with existing environment, Transferable through learning and not duplicate.

Types of Knowledge

Knowledge is classified into three types:

1. Explicit knowledge
2. Tacit knowledge
3. Cultural knowledge

Explicit Knowledge

It is formal and easy to communicate to others. It is the knowledge of rationality. That is, policies, rules, specifications and formulae. It is also known as Declarative knowledge.

Tacit Knowledge

It is complex form of knowledge. It has two dimensions namely technical and Cognitive. This is personal knowledge, which is in human mind and difficult to formalize and also difficult to communicate.

Cultural Knowledge

B.B.Chand describes the cultural knowledge as knowledge which includes Assumptions and beliefs. It is used to understand, describe and explain the reality as well as conventions. It is also useful to form the framework among orgazational members, recognize the new information and evaluate alternative interpretations and actions.

Sources of Ways of Acquiring Knowledge

The theory of evolution proves that man is basically an animal and yet it is said that the man is greatest of all living beings. A questing therefore naturally arises—"What makes the man great, and different from other animals?" Answer to this question is simple—" because, man is a rational animal". Among animals only man alone is capable of acquiring knowledge to a wonderful extent during its journey from the Paleolithic age the present man has increased its knowledge sphere.

Some of the major ways or sources of knowledge may be listed as under:

Authority

Dictionary meaning of authority is: power or right to enforce opinion, or power to influence the conduct and action of others, or commanding highest regard and respect over a group of persons. Authority is a very big source of knowledge in our society in all walks of life, such as in family, in government, in religion, in literature, in various disciplines and so on. a great deal of our knowledge comes to us through such authorities. A child acquires most of the knowledge during the childhood through his father or mother.

In communist countries views held by Marx and Lenin are considered so much important that they influence and determine the laws of the nation and its policies.

The field of religion, authority plays a vital role in acquiring knowledge. the common man is so much attached to religion that he acquires fundamental knowledge about the world, the universe, way of life. Conduct, behavior, etc by reading text, or by listening to religious discourses. in medicine, a patient accepts the advice of Doctor by considering him authority.

Thus in authority-based knowledge, the thinking of a person or his acts are governed by the concerned authority. It is based on faith. There is no scope for analysis, arrangement, or logic in it. Knowledge acquired through an authority may culminate into two forms of behavior reasonable and fantastic .Assassination of Socrates, mahatma Gandhi, Martin Luther King, Indira Gandhi, and the fatwa posh an salmen Rushdi are often quoted as examples of fantastic.

Tradition

Human beings acquire knowledge of the surroundings and many other things through tradition. This knowledge is transferred from one generation to the next generation or by fellow-members of the society through one another. Authority cent red knowledge is based on faith and tradition centered knowledge is based on belief. Tradition is important source or way acquiring knowledge.

Sense Perception

A person acquires a great deal of knowledge through sense perception. Psychologists accept sense perception as a major source of knowledge. The organs concerned with these senses are eye' ear, nose, tongue and skin. When any things come into contact with these, the concerned senses get stimulated and knowledge is gained or acquired. The knowledge that fire is hot, ice is cold and so on, is the result of stimulation of senses.

These are considered to be fine basic senses.

Sense perception has been accepted as a major source of knowledge by Indian authorities also since ancient times. The saying "Pratyaksham Kim Pramanam" i.e. knowledge acquired through direct observation/experience needs no evidence.

Reasoning/Intellect

Knowledge – may it be sensory or philosophical—can be improved, sharpened, connected and modified through intellect by the application of reasoning. The basic process of learning, i.e. acquisition of knowledge through trial and error process, also applies intellect .e.g. let us assume that a person comes across an advertisement relating to sale of a house. He can react two ways:

1. He may collect all savings at home and bank, rush to the seller finalises the deal if the saving are less makes the payment and purchase the house.
2. He can do another things; he may visit the location, examine the house, analyse and ascertain whether the house suits his requirements location and accommodation wise if yes, he talk to the seller, negotiates the price, takes from him one-two days time for payment and in the meantime ascertains that the house is not subject to any family or legal dispute. The second way is certainly more rational and tends to produce better knowledge, i.e.reason-based or logical knowledge.

Intuition and Speculation: Speculative mode of thinking therefore is based on reflection and intuition. The knowledge about religion, morale, future, etc can be concluded by intuition which can be developed with the aid of rigorous thinking and be of mental analysis, including meditation. Intuition may be of great help in generalization or drawing hypotheses. Ancient Indian sage like Parashar, Aryabhatt and others gave radical theories of astronomy and astrology as they had developed their intuition. Newton must have received a flash of intuition when he got the clue from a falling apple and developed the theory of gravity of earth. These great people must have possessed high degree of intuition and applied speculations in drawing their conclusions.

Positivistic Thinking and Scientific Method

It is guided by positive fact, observable phenomenon and the laws established by scientific method. This system rejects all metaphysical, sensory, logical or traditional knowledge unless these stand the test of

scientific method through induction and deduction. It runs into three stages:

1. *Perception Stage:* The person perceives or experiences some facts or occurrence.
2. *Metaphysical Stage:* He analyses it to himself in the light of observation, intuition and intellect.
3. *Positive Stage:* He establishes his findings resulting into positive knowledge of which he is confident.

Scientific Method is known as "Modern Method of Acquiring Knowledge"(Understanding Educational Research: An Introduction by Deobold B. Van Dalen. New York, McGraw-Hill,1962, p.23). Knowledge gained through scientific methods is reliable as it has the following major attributes:

1. It recognizes only those facts or occurrences which are evidenced by observation and experimentation.
2. It does not accept any knowledge as 'universally true' but 'probably true'.
3. It welcomes and is open to valid criticism and is willing to modify or change its views if found unscientific.
4. As against other sources, it is not only subjective but both subjective and objective.

Knowledge and Library Science

The concept and name—"Knowledge Management"—was started and popularized in the business world during the last decade of the 20th century. It was the business world that first recognizes the importance of knowledge in the "global economy" of the "knowledge age". In the new knowledge economy, the possession of relevant and strategic knowledge and its unceasing renewal enables businesses to gain competitive advantage. The applications of knowledge management have now spread to other organizations including government agencies, research and development departments, universities, and others.

The management of information has long been regarded as the domain of librarians and libraries. Librarians and information professionals are trained to be experts in information searching, selecting, acquiring, organizing, preserving, repackaging, disseminating, and serving. However, professionals in information technology and systems have also regarded information management as their domain because of the recent advances in information technology and systems which drive and underpin information management. One of the clearest evidences of this is that the positions of "Chief Information Officer" (CIO) in many organizations are generally held by information technologists instead of librarians. In fact, most of the work of CIO's has to do with developing and managing the IT infrastructure and systems, not the managing of information per se.

With the growing interest in knowledge management, many questions have been raised in the minds of librarians regarding: the difference between information and knowledge; between information management and knowledge management; who should be in charge of information and knowledge management; would librarians and information professionals with appropriate education and training in library and information science be most suitable for the position of "Chief Knowledge Officer" (CKO) in their organizations; and what libraries can do in implementing knowledge management.

Knowledge management is an audit of "intellectual assets" that highlights unique sources, critical functions and potential bottlenecks which hinder knowledge flows to the point of use. It protects intellectual assets from decay, seeks opportunities to enhance decisions, services and products through adding intelligence, increasing value and providing flexibility.

Knowledge management complements and enhances other organizational initiatives such as total quality management (TQM), business process re-engineering (BPR) and organizational learning, providing a new and

urgent focus to sustain competitive position

Knowledge management is a process of creating, storing, sharing and re-using organizational knowledge (know-how) to enable an organization to achieve its goals and objectives.

1. Historical Background
2. Acquisition of Books
3. Organisation
4. Reference Services
5. Demand of the five Laws.

The challenge of Knowledge Management is to determine what information within an organization qualifies as"valuable."All information is not knowledge, and all knowledge is not valuable. The key is to find the worthwhile knowledge within a vast sea of information.

1. Knowledge Management is about people. It is directly linked to what people know, and how what they know can support business and organizational objectives. It draws on human competency, intuition, ideas, and motivations. It is not a technology-based concept. Although technology can support a Knowledge Management effort, it shouldn't begin there.
2. Knowledge Management is orderly and goal-directed. It is inextricably tied to the strategic objectives of the organization. It uses only the information that is the most meaningful, practical, and purposeful.
3. Knowledge Management is ever-changing. There is no such thing as an immutable law in Knowledge Management. Knowledge is constantly tested, updated, revised, and sometimes even"obsoleted"when it is no longer practicable. It is a fluid, ongoing process.
4. Knowledge Management is value-added. It draws upon pooled expertise, relationships, and alliances. Organizations can further the two-way exchange of ideas by bringing in experts from the field to advise or educate managers on recent trends and developments. Forums, councils, and boards can be instrumental in creating common ground and organizational cohesiveness.
5. Knowledge Management is visionary. This vision is expressed in strategic business terms rather than technical terms, and in a manner that generates enthusiasm, buy-in, and motivates managers to work together toward reaching common goals.
6. Knowledge Management is complementary. It can be integrated with other organizational learning initiatives such as Total Quality Management (TQM). It is important for knowledge managers to show interim successes along with progress made on more protracted efforts such as multiyear systems developments infrastructure, or enterprise architecture projects.

Importance of Knowledge Management

Knowledge and Information Management is important only to extent that it enhances an organization's ability and capacity to deal with various situations that emerges during various operations. An organization has it look into the following four dimensions.

Mission: What are we trying to accomplish?

Competition: How do we achieve a competitive edge?

Performance: How do we deliver the results?

Change: How do deal with change?

KM provides innovative and cost effective solution to the library users. Information technology, especially the cyber technology drives the way of knowledge management.

Use of cyber technologies accelerates the rate of quality, quantity and cost effectiveness with improved productivity and suitability in services. It decreases cost and harnesses the human intelligence very efficiently. Knowledge Management involves enhancing organizational learning.

Knowledge management seeks to make the best use of the knowledge that is available to the library, while creating new knowledge in the process. Knowledge management should be about exploiting and realizing knowledge of the employees and building a culture where knowledge sharing can thrive. Throughout the process, the library will generate value from their intellectual and knowledge-based assets. Therefore, the library will continue to grow and prosper from the knowledge of employees throughout the library. This is also a great benefit for new employees replacing retirees within the library structure. Knowledge management is often facilitated by information technology, but technology itself is not knowledge management.

The Objective of Knowledge Management for Libraries

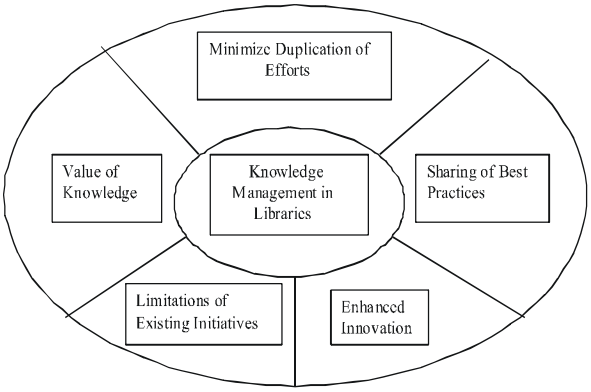
Knowledge innovation is the core of the knowledge economy society. As bases for collection, processing, storage and distribution of knowledge and information, libraries represent an indispensable link in the scientific system chain, an important link in the knowledge innovation Libraries take part in scientific research process directly. The library work is an element of knowledge innovation.

Libraries must pay attention to diffusion and conversion of knowledge. They act as bridge for turning the results of knowledge innovation into realistic productive forces. Knowledge Management in libraries is to promote relationship in and between libraries, between library and user, to strengthen knowledge internetworking and to quicken knowledge flow. Libraries will carry out researches on development and application of information resources, construction of virtual libraries, protection of intellectual property rights in the electronic era etc., thus founding the base for knowledge innovation in the knowledge economy era.

Need/Scope of Knowledge Management in Libraries

The need for application of knowledge management in libraries can be analyzed on the basis of factors:

Limitations of Exiting Initiatives: TQM Performance Appraisal of Employee and other such as initiatives have helped libraries to become more accountable towards their job and responsibilities. However these initiatives are not able to harness the inherent talent of library personnel's as well as their intrinsic knowledge that could differentiate the services



provided by the libraries and create a winning advantage in the society.

Source

Value of Knowledge: Applied know –how can enhance the quality of products and services. It may be helpful in achieving cost effectiveness in the various library operations and services.

Minimize Duplication of Efforts: By retaining knowledge as organizations downsize or reshuffle, library and information centers can save costly mistakes or reinventing the wheel.

Sharing of Best Practices: Library and information centers can save millions a year by taking the knowledge form their best performers and applying it similar situations elsewhere. The applied know-how of the best performing library and information centers may be adopted as a model.

Enhanced Innovation: The development like Internet vas revolutionized the concept of global village, this may be helpful to Library and Information Centers as to cater the library services globally by applying KM methods in

improving their information products and services. A success of such small initiatives will motivate them for the further innovation in its operations and services.

Knowledge Management in Library

Business world is changing in the new knowledge economy and in the digital age, libraries of all types are undergoing drastic changes also. The new role of Libraries in the 21st century needs to be as a learning and knowledge center for their users. As a learning organization, libraries should provide a strong leadership in Knowledge management. Unlike the business organization, the learning organization should sharing of knowledge with others outside. Libraries should improve their Knowledge management in all of the key areas of library services.

Knowledge Resources Management

The exponential growth in human knowledge in a variety of formats, libraries need to develop their resources, access and sharing strategies from printed to electronic and digital resources. Restricted by limited funding, technology, staff and space, libraries must carefully analyze the needs of their users and seek to develop cooperative acquisition plans to meet the needs of users Libraries should be developed and maintained an integrated online public access catalogue (OPAC) with both internal and external resources as well as printed and other formats of knowledge. Useful websites and knowledge sources should be regularly searched and selected from the internet and included in OPACs. A system for the reviewing and updating of these resources should be performed.

Going beyond explicit knowledge, libraries should also develop to capture all that tacit knowledge that is of importance to their users, their organizations, and to the internal operations of libraries. The website of each library should serve as a "portal" for all sources of relevant knowledge and information whether explicit or tacit, whether on site or remote and in all formats.

In the current digital and networked knowledge age, the size of information sources on the web is growing exponentially. No one really knows exactly how many web pages are on the internet, because new web pages are added every second. Universities and research organizations are knowledge reservoirs. These highly valued intellectual assets, regardless of whether they are explicit or tacit, should be inventoried, archived, indexed, frequently updated and made accessible in digital form, Libraries should use the new approach to capture web information by cooperative efforts such as Dublin core metadata and the cooperative online resources catalogue (CORC). Other new methods such as data mining, text mining, content management, search engines, spidering programs, natural language searching, linguistic analysis, semantic networks, knowledge extraction, concept of yellow pages, and such technologies in information visualization as two dimensional or three dimensional knowledge mapping etc., have been a part of recent developments in knowledge management systems.

Resources Sharing and Networking

Traditionally, libraries have a long practice of resource sharing and networking. These have been greatly expanded by the rapid development of computer, telecommunication networking and digital technologies The sources of the cooperative work and resources sharing of OCLC (Online Computer Library Center) and Ohio LINK (Ohio Library and Information Network) in US, is the best examples in resource sharing and networking with the result of the full cooperation and participation of all member libraries without selfishness. Large and major libraries must take the lead in such an Endeavour.

Information Technology is a Tool for Knowledge Management

To facilitate the implementation of knowledge management, a well-defined and

operational knowledge management system should be in place. Latest information technology should be used in the libraries. In this regard, the library director / librarian should consider himself as the chief knowledge officer of the entire organization and should work together with the chief information officer, heads of the planning department, the computer and information technology center, the human resource management department, the finance department etc., to design and develop such a system. Such knowledge management system should be built on the existing computer and information technology infrastructure including upgraded intranet, extranet, internet and available software programs to facilitate the capture, analysis, organization, storage and sharing of internal and external information resources for effective knowledge exchange among users, resource persons (faculty, researchers, subject experts etc.,), publishers, government agencies, business and industries and other organizations via multiple channels. In recent years, many of the newly developed information technology for databases and information/document management can be utilized in knowledge management such as data warehousing, data mining, text mining etc.

Human Resource Management

The most important resource in the knowledge economy system is the talents who grasp knowledge. The talent competition has become the focus of market competition in the knowledge economy era. In the knowledge economy era, the libraries will attach importance to vocational training and lifelong education of library staff to raise their scientific knowledge level and ability of acquiring and innovative knowledge. They also will respect the human value, guide and bring into play wisdom potentialities of library staffs. It is an important way for raising work efficiency of library staff. An all round improvement of library staff's quality and positioning of the human value will become important objectives of knowledge management in Library and Information centers. The library staff members of Universities and research committees should be inventoried, indexed regularly and be made searchable and accessible through electronic databases created and maintained by libraries. The expertise should be appreciated with appropriate rewards and incentives. As a learning organization, libraries should allocate annual funding to provide continuing education and staff training to all staff members. Knowledge must be renewed and expanded to prevent it from becoming stagnant.

Libraries should also encourage the transfer of knowledge and experience from experienced staff to new staff members. A mentoring system should be in place to help new comers to learn from experienced library staff. Informal seminars, discussion sessions for staff can interact and exchange "lessons learned" "best practices" and other experiences should be scheduled at regular intervals and at convenient times sit and chat rooms can be created through intranet libraries should be attending to favorable working conditions and environment, which will contribute to better staff retention.

User Services in Knowledge Management

The utmost goal of knowledge management is to provide users with a variety of quality services in order to improve the communication, use and creation of knowledge. Information about each user can be obtained by analyzing the records of user registration, surveys, circulation and inter library loan, frequently asked reference questions and the use of e-journals and digital resources etc., User satisfaction and needs should be collected through periodical user's surveys. The findings should be used for the planning and redesign of the existing library services. Some of the manual services of the library such as "new publication alert" and "Dissemination of information" should be done automatically by employing the "push Technology" with great efficiency and convenience. Each library user can also set up

his virtual "my library/portal" for new information/resources provided by the library.

Technologies for Knowledge Management of Libraries

Library and information centers should be developed/modified based on the perfect environment for new media applications. Due to impact of globalization, economic competition and revolution of ICT, the libraries are under going tremendous change its environment. ICT tools and techniques, knowledge management systems, internet, web resources, digital libraries have made a significant change in the existing library systems and services. It is a major challenge for the library professionals.

Knowledge acquisition is the starting point of knowledge management in Libraries. The application of IT, enlarges the scope of knowledge acquisition, rises Knowledge acquisition, speed and reduces knowledge acquisition cost. It is impossible to accomplish such important tasks by using man's brain only in the modern society in which the knowledge changes with each passing day. It will be possible to link Closely knowledge sources and knowledge workers by computer networks, thus Constructing knowledge networks in libraries based on realization of single point Informationalization.

Data wise technologies developed the following list of technologies for the knowledge management.

- Intranet within an organization
- Document management systems
- Information retrieval systems
- Relational and object databases
- Electronic publishing
- Groupware and work flow systems
- Push technologies
- Help desk applications
- Brain storming applications
- Data warehousing and data mining

Globalisation

Exploring the new Dimensions: Knowledge Management can be helpful in introducing the library and information professionals globally, providing them a platform for their regular skill enhancement and up-to-date,realistics and practical knowledge. It can be used for the purpose of converting the traditional learning system into an e-learning practice, thus accelerating the new dimensions of its scope and coverage.

Conclusion

Knowledge Management is an emerging field, much tooted or hyped since late 1990s. Due to the complicated nature of knowledge and its management, it is often difficult to estimate or demonstrate the value of the Knowledge Management. In the business world, knowledge management has been regarded as strategically important for organizations to gain a competitive advantage over their competitions, to add value their products, to win greater satisfaction from their customers.

In the library world, there is a lesson to be learned from the business world. For any library to succeed in implementing knowledge management will require a strong leadership and vision from the top administration. Information Technology and systems can provide effective support in implementing knowledge management. Libraries should work together with Information Technology Professionals and others to develop the appropriate knowledge management systems. Libraries, with limited budget and human resources, should utilize the current management structure and technology to implement KM, either bottom-up or top-down. With an effort, KM will help to increase libraries operational efficiency and later to the ever increasing need

References

1. Yogesh Malhotra. Knowledge management and business model innovation . Idea group Publication.
2. Pervaiz K Ahmed, Kwang Kok Lim, Ann YE Loh. Learning through knowledge management.
3. Alavi Maryam, Leidner Dorothy E. Knowledge management systems: issues, challenges, and benefits. *Communications of the AIS.* 1999; 1(2).
4. Serenko Alexander, Nick Bontis & Josh Grant. A scientometric analysis of knowledge management and intellectual capital academic literature (1994-2008). *Journal of Intellectual Capital.* 2009; 10(1): 8-21.
5. Serenko Alexander, Nick Bontis & Tim Hardie. Organizational size and knowledge flow: A proposed theoretical link. *Journal of Intellectual Capital.* 2007; 8(4): 610-627.
6. Wright Kirby. Personal knowledge management: supporting individual knowledge worker performance. *Knowledge Management Research and Practice.* 2005; 3(3): 156–165. doi:10.1057/palgrave.kmrp.8500061.
7. Shanhong T. Knowledge Management in Libraries in the 21st Century. 66th IFLA Council and General Conference, Jerusalem, Israel, 2000. http:// www.infolibrarian.com.
8. Raj Kumar PV. Knowledge Management: An Untold need of Tomorrow's World. 2nd International CALIBER-2004, New Delhi: 2004; 586-590.
9. Mphidi Hamilton and Snyam Retha. The Utilization of an Intranet as Knowledge Management Tool in Academic Libraries. *The Electronic Library.* 2004; 22(5): 393- 400.
10. Kumar PSG. Information and Communication. New Delhi: BR Publishing Corporation.

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Original Article

Organizational Behaviour in Library and Information Centers

P. Panneerselvam

Abstracts

The objective of this paper is to discuss the importance of Human resource management in Library and Information and how it play a major role in the employees prolific performance. Generally a service organisation aims at the welfare measures or services. It is a known fact that libraries are considered as service oriented organisations, and they are not revenue fetching departments. Hence managing organisational behaviour in the library and information centers is much essential.

Keywords: Employees behaviour; Motivation; Organisational climate.

Introduction

Library and Information are increasingly involved in management practices, due to the challenges posed by various factors, such as pressure from the parent body, inability to satisfy the micro-level and information requirements of the users and above all, the recent widespread trend of library automation which leads to the extensive use of information technology in libraries etc.

The climate influences the organisational behaviour to a great extent. But there bound to be similarities in certain factors among organisations, which have a common goal. For example the fundamental objective of any business organisation is to gain or increase the financial benefits, which are generally termed as 'profit organisations'. But in non-profit or service oriented organisations the major objectives widely differ with each other.

Whether it is a public library or academic library or special library, the main objective is to satisfy the information requirements of their clients. Though the major objective appears to be similar, the organisational behaviour of each type of the library is different. The major factor which differentiate the organisational behaviour of each type of organisation is the 'organisational culture or climate'.

Concept of Organisational Behaviour

Organisations are not just the structure of building or its infrastructure. An organisation consists of people who interact with other groups of people and among themselves to accomplish specified goals. The behaviour of the people has an impact on the performance of the organisation. The major challenges faced by organisations are adopting to use diverse work environment activities concerned with understanding factors, which influence individual behaviour in an organisational setup. To manage an organisation successfully, it is important to study the human behaviour, which is highly influenced by organisational climate.

Organisational climate

This concept has been viewed and discussed in different dimensions by several management scientists. Organisational climate is the perception of how it feels to work in a particular environment. It is the

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atmosphere of the workplace, which includes a complex mixture of norms, values, expectations, policies, and procedures etc. It is, people's perceptions of 'the way they do things there'. Generally the climate indicates the perception of the employees about their organisation. Every organisation develops its own personality, which is reflected in its climate.

Variables of Organisational Climate

From the definitions of organisational climate, put forth by different Management scientist, various aspects could be derived as its variables. Among those variable leadership styles, communication patterns, motivational forces, decision-making process, goal setting process, training, etc., have been identified as organisational variables for this study. Other variables such as job satisfaction and social recognition have been selected as variables since they also play a vital role in the organisational behaviour and they have an impact on the organisational climate of any organisation. Each of these variables selected for this study have been emerged from various schools of management thought, which serve as a preamble for this research work, hence it is essential to be discussed here.

Schools of Management Thought and their Implications on Library Management

The Schools of management thoughts emerged from the working experiences of management scientists during late 19th and early 20th century. They conducted experiments, surveys and case studies in number of industries and based on the results they propagated several theories. Though these theories were emerged some centuries back in industrial and business organisations, they could be well applied in libraries also, since all the theories mainly deal with human behaviour. The theories could be broadly as classical and neo-classical.

In classical school of thought, bureaucratic principles such as division of labour, strict hierarchical organisational structure, written communication pattern, power, adaptation of rules and regulation, less or no outside intervention and professional training, etc., have been still adopted in almost all government organisations such as defense, prison and police departments. But the intensity of adopting these principles may vary among these organisations. In organisations such as defense, police and prison, these principles must be adopted in a very strict manner. In other government departments the intensity of adopting the bureaucratic principles may not be compared with the above said departments. A relaxed bureaucratic principle leads to a soft climate to an extent. This sort of bureaucratic set up is generally found in libraries in India. All the principles of Max Weber are followed in all type of libraries with some variations.

Another major contributor to classical theory of management was Fredrick Winslow Taylor known as 'Father of Scientific Management'. He also adopted most of the principles of Max Weber and in addition to that he introduced scientific principles, such as scientific selection, scientific training of the staff and identification of best method of doing the job based on his 'Time and Motion' study. Incentive wage system, which was termed as 'piece rate system' was also adopted by him to motivate the employees. Though 'piece rate system' could not be adopted in Libraries, other scientific principles are adopted in Libraries. Similarly all the fourteen principles of Henri Fayol are adapted even today in almost all type of organisations and libraries are no exception to this phenomenon.

In neo-classical school of thought, most management specialists concentrate on behavioural aspects of the employees and their implications on motivation. Abraham Maslow's 'Hierarchical Need Theory' is applicable to any individual in general. The basic needs, such as food, clothing and shelter should be first satisfied for any one and than a person will aspire for the second hierarchical need 'security safety needs'. Once this need is satisfied it is natural for anybody to long for 'belongingness', and friendly contacts since 'no

man is an Island'. Once these levels have been achieved, any one would wish to go up one more step of aspiring 'self-respect' or 'ego needs'. It is natural for anyone to feel that people should respect them. Once all these needs are fulfilled there may be at one stage where people will aim for 'self-actualization' or fulfilling one's own potentials. This need may or may not be fulfilled by many due to lack of supporting factors. All the hierarchical needs are common for the library professionals also.

Elton Mayo's 'Hawthorne effect' focused that 'Human relations' was one of the most important aspects of motivation. The study revealed that there was no correlation between working conditions such as better 'illumination', 'long coffee-breaks' and productivity. But at the same time the study proved that there was a high correlation between human factor and productivity. In other words the attention given to the employees during the experiment motivated them. This is a normal behaviour for any human being for whom the social recognition is one of the significant motivating factors. This social recognition is very much lacking in library profession in India.

Herzberg's two-factor theory identified 'positive motivating factors' and 'hygiene factors', which he respectively termed as 'job content' and 'job context'. According to Herzberg sense of achievement, recognition, the work itself (challenging job), responsibility, advancement and personal or professional growth are the positive motivating factors. He further claimed that certain factors such as policy, supervision, working conditions, salary and security, etc, would cause only 'dissatisfaction' if absent, but they were not positive motivators. He related hygiene factors to 'job context'.

In this present study, Herzberg's theory has also been proved to be true in libraries. Rensis Likert made a study of leadership styles and grouped organisations into four groups exploitative, benevolent, consultative and participative. He revealed that majority of the employees prefer 'participative leadership' style. This may prove to be correct where the employees are well aware of the facts concerned with decision-making and risk factors involved in their decisions. If something goes wrong they should be ready to identify better solutions. Application of Likert's participative leadership style in libraries depends on the experience and training given to the staff in decision-making.

Organisational Variables

The organisational variables include:

- Leadership Style
- Motivational Forces
- Communication Pattern
- Decision Making Process
- Goal Setting Process
- Training and Development
- Job Satisfaction
- Social Recognition

The above variables have been selected from different schools of thought.

Leadership Style

Leadership style is the manner and approach of providing direction, implementing plans, and motivating people. It is the ability to influence, motivate, and enable others to contribute towards the effectiveness and success of the organisations of which they are members.

Motivational Forces

Motivation is a human psychological characteristic that contributes to a person's degree of commitment. It includes factors that cause, channel and sustain human behaviour in a particular committed direction. Motivating is the management process of influencing people's behaviour for achieving the goals of the organisation in an effective manner.

Communication Pattern

Communication is not only the process of sharing information. But it is a kind of social interaction, which has a vital role in an organisation. Understanding among the staff and maintaining cordial relationship among the members is very essential for the success of the organisation. This factor depends on the type of communication which is adapted by the authorities and among the same level of staff.

Decision Making Process

Decision making is cognitive process leading to the selection of a course of action among alternatives. It is the process of identifying and selecting a course of action to solve a specific problem. Every decision making process produces a final choice; It can be an action or an opinion. Decision making in libraries are mostly related to the higher level of staff.

Goal Setting Process

Goal Setting involves setting specific, measurable and time targeted objectives. In an organisational or business context, it may be an effective tool for making progress by ensuring that participants are clearly aware of what is expected from them, if an objective is to be achieved. On a personal level, goal setting is a process that allows people to specify then work towards their own objectives.

Training and Developmental Methods

Training and developmental methods have become more prevalent in recent years because of the increasingly complex demand. It's a field concerned with workplace learning to improve performance. Such training can be generally categorized as on-the-job or off-the-job. On-the-job describes training that is given in a normal working situation, using the actual tools, equipments, documents or materials that the employee will use when fully trained. On-the-job training is usually most effective for vocational work. Off-the-job training takes place away from normal work situation which means that the employee is not regarded as productive worker when training is taking place. An advantage of off-the-job training is that it allows people to get away from work and totally concentrate on the training. This is most effective for training concepts and ideas. This training and developmental through experience alone is a time consuming and unreliable process. Both on the job and off the job training are commonly prevail in libraries.

Job Attitude

Job attitude is the most important aspect in an organisation, which has a significant impact on the migration of staff. Longer tenure of the staff is one of the factors, which leads to the success of the organisation. It depends mostly on environment, policies etc., yet behavioural and psychological aspects also contribute to a greater extent. Herzberg's two-factor theory has been applied in this research work for studying job attitude of the library staff.

Social Recognition

Social recognition has been considered as a significant motivating factor. It is human nature, which expects individual's efforts and works to be recognized by co-workers and by society. Maslow's hierarchical need theory has been applied in this research work for studying the implication of social recognition among library professionals.

Conclusion

Though libraries are considered as homogeneous and almost all the issues are common to an extent, it cannot be categorically ruled out the various manifestations of issues and problems in different types of libraries. Each organisation tends to develop its own personality due to the climate existing and outside the organisations. Library personnel must be utilized in a right way since the

behaviour of employees has an impact of performance.

References

1. Evans Edward G. Management *techniques*: 2nd. New York: Academic Press; 1983.
2. Herzberg F. *Motivation to Work*, 2nd . Massachusetts: 1959.
3. Koontz Harold and Weihrich, Heinz. *Essential of Management: An international perspective.* New Delhi: 2004.
4. Kotter JP. *A Force for Change: How Leadership Differs from Management.* New York: 1990.
5. Locke EA. *The Essence of Leadership: The Four Keys to Leading Successfully.* New York: 1991.
6. Ranganathan SR. *Library Administration,* 2nd. Chennai: 1960.
7. Stoner James AF. *Management*, 2nd. New Jersey: Prentice Hall; 1983.
8. Heinström Jannica. Psychological factors behind incidental information acquisition. *Library & Information Science Research.* 2006; 28(4): 579-594.
9. Werther William B, Jr. *Human Resources and Personnel Management.* New Delhi: 1996.
10. Richard Eidet W. The organisational culture in libraries: mafia network. 1993: 31-4.
11. Manorama S. The organisational climate of university libraries. *Library Management.* 1993: 28-30.
12. Davies. The organisational culture of an academic library: implications for library strategy. *British Journal of Academic Librarianship.* 1992: 69-89.
13. Isaac D. Staff morale in libraries. *Lucknow Librarian.* 1991: 31-35.

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Original Article

Quality Management Approaches in Libraries and Information Services

R. Padmavathi*, P. Sethuraj**

Abstract

The increasing expectations of users for better services have motivated libraries to view quality management as an effective means of incorporating quality improvement into their related services. Effectively implementing quality management in libraries requires an understanding of applying appropriate quality management concepts and techniques.

This article reviews the quality management tools and techniques developed over the last five decades and then, categorises them into three broad approaches. In addition, a framework of quality management approaches and techniques is developed and applied to assess and improve the service quality of libraries and information services.

Keywords: Quality management; Management tools;Information services; Techniques.

Introduction

The increasing expectations of users have challenged libraries to improve their quality of services. Limited by increasingly tighter budgetary restrictions, library managers feel more pressure to fully exploit available resources. Therefore, several libraries and information services have adopted quality management practices in recent years. Among the various initiatives implemented include ISO 9000 standards (Johannsen 1996), 5S movement (Taipei Municipal Library 1996), and benchmarking (Zairi and Hutton 1995; Garrod and Kinnell 1996; Garrod and Kinnell 1997; Buchanan and Marshall 1996). By adopting quality management, the library's image and service quality can be improved, and librarians can increase productivity while focusing on the customer's needs (Johannsen 1992; Taipei Municipal Library 1996).

Quality management has been extensively applied within the manufacturing industry for over a decade. More recently, the service industry has increasingly emphasised this area. The public sector has also put forward major initiatives to improve quality. Closely examining available quality management techniques in service industries and the public sector reveals their effectiveness and positive impact on the customers.

Quality management is increasingly integrated into library services, following their perceived success in manufacturing industries, with particular emphasis on improving service quality.

Libraries have developed numerous programs to fulfil user requirements. In general, libraries concentrate mainly on maintaining administrative activities, building the collection, and serving the users. Therefore, the functions of a library can be broadly categorised as administrative management, technical services and public services. Administrative management defines the objectives of the library, allocates the resources to achieving such objectives, co-ordinates related activities, and assesses the performance

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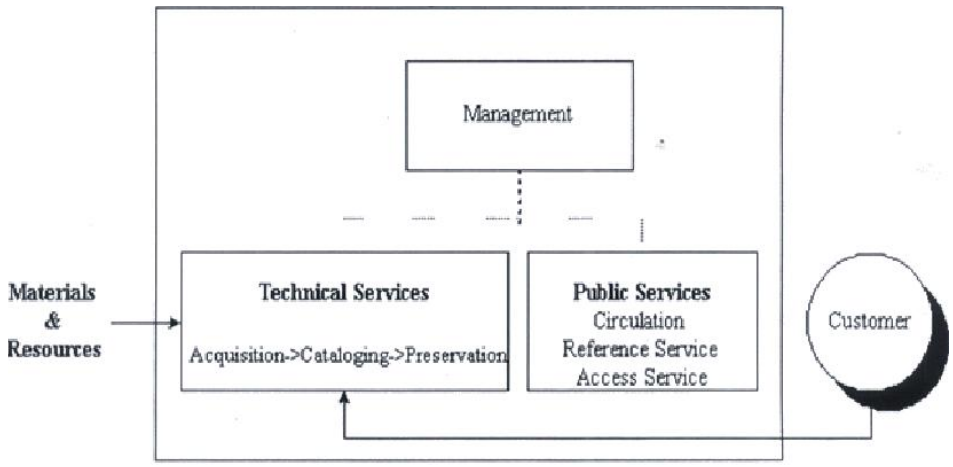
Figure 1 : A System view of Library Service



of related services. Technical services largely focus on building the collection and making the collection more accessible for users. The activities of technical services include acquisition, information organisation, and preservation. While all library activities strive to, public services serve the customers most directly. Related activities consist of circulation, reference and access service.

Library services can be viewed as an open system with materials, resources and information needs of customers as input. In other words, the activities involved in providing and using library services are more interrelated than isolated. Figure 1 depicts the interaction within a totally integrated library system. While the library only exists for serving customers, the service delivery system should be user-oriented. Although, all functions and activities focus on customers, the direct interaction between library and customers occurs in public services. That is, librarians working in circulation, reference and access service respond and translate the customer's expectations to the technical service department and administrative management. Depending on the ability of public services to accurately interpret customer requirements, all functions of the library can be directed to satisfying the quality requirements and information needs of customers.

Quality management in libraries and information services has received considerable attention, with a majority of those investigations describing quality concepts, quality management principles, related processes, and limitations.[1] From the perspective of library services, adopting quality programs increases the effectiveness of the library and satisfies increasingly higher customer expectations. Most quality management-related literature is based on experience drawn from industrial organisations, particularly on the manufacturing of tangible products delivered to the end-user at a later stage. Recent years have witnessed the increasing acceptance of quality management into services-related and non-profit organisations, such as education. Despite the significant level of adaptation within service organisations and the public sector, there exists missing link between quality management principles/tools and the implementation of quality management in libraries and information services. Johannsen (1992) foresaw the risk:

... as the general principles of quality control have originally been developed in private sector and industrial Quality Management Approaches in Libraries and Information Services environments, you may expect problems, when you wish to use those principles to manage quality of an intangible resource, information, in organizations, where structures, culture, management style, business strategies and customers are often very unlike industrial organizations.

Effectively implementing quality management in libraries and information services requires an understanding of the

following:

- The unique characteristics of library operations
- The nature of interaction between librarians and customers
- The making of recommendations on the application of appropriate quality management concepts and techniques.

These issues are discussed herein.

Quality Management Approaches

Quality management approaches can be categorised broadly into three stages according to the evolution of management control. Management can implement control before an activity commences, while the activity occurs, or after the activity has been completed. Consequently, three types of control are feedforward, concurrent and feedback.[2] The most desirable type of management control is feed forward control that is future-directed and takes place in advance of the actual activity. Feed-forward control is advantageous because it allows management to prevent anticipated problems rather than having to cure them later and to avoid wasting resources. Concurrent control, as its name implies, takes place while an activity is in progress. When control is enacted while the activity is being performed, management can correct problems before they become too costly. The most conventional means of control relies on feedback. The feedback control takes place after the activity. However, a disadvantage of this approach is that the damage will have already occurred by the time that the manager has the information to take corrective actions. Consequently, feed-forward control is the most economic approach and can meet the requirement of customers, followed by concurrent control and feedback control, respectively. Interestingly, quality management approaches developed and applied to assess and improve product quality can be related to types of management control from the perspective of an open system.

Quality management approaches were originally developed as being product-oriented. Feed-back control, an inspection-based quality control approach, was introduced to detect inferior products at the after-production stage. Realising that quality could not be improved by merely inspecting the finished product, subsequent efforts switched the emphasis of quality management from inspection to process control: from feedback control stage to concurrent control stage. The underlying premise regarding quality in the concurrent control stage is that quality is equivalent to meeting or exceeding customer expectations. Manufacturing products that reflect the diverse needs of customers, is more of a function of good design than of good control of a process. Therefore, quality management has gradually shifted to emphasis on the design phase: from concurrent control stage to feedforward control stage. In the following, we discuss the three approaches of quality management and related techniques.

Quality by Inspection

The inspection-based system was perhaps the first scientifically designed quality control system to evaluate quality. The system is applied to incoming raw materials and parts for use as inputs for production and/or finished products. Under this system, some quality characteristics are examined, measured and compared with required specifications to assess conformity. Therefore, the inspection-based system is a screening process that merely isolates conforming from non-conforming products without having any direct mechanism to reduce defects.

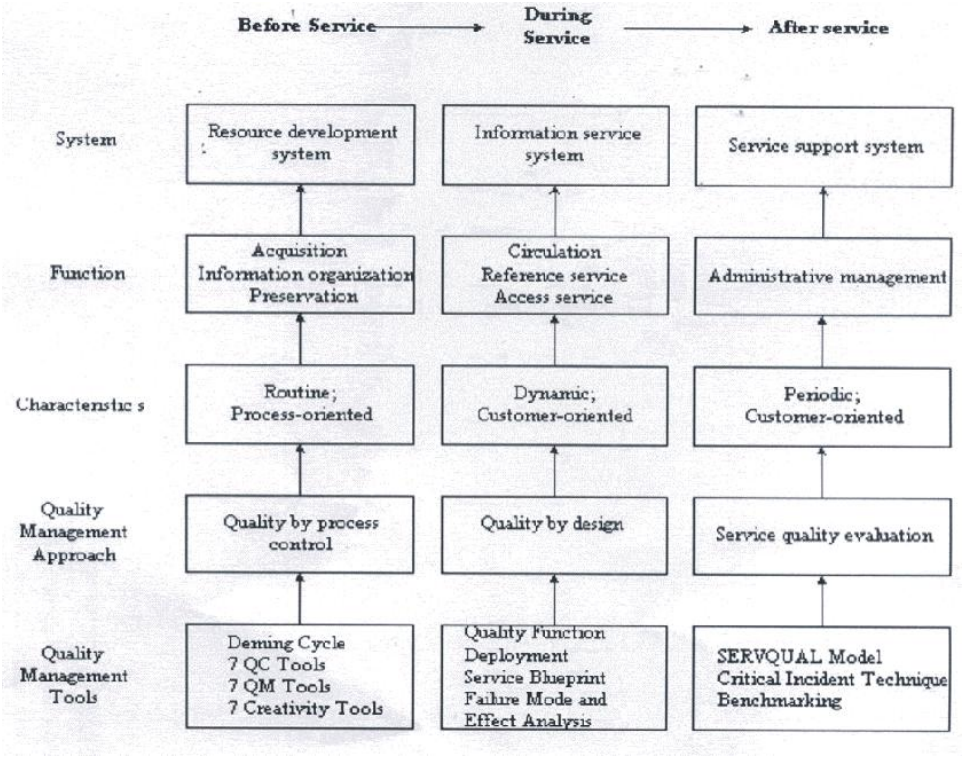
Reducing the damage to final products, sampling plans were developed to control product quality. Although an effective technique, a quality control system based on sampling inspection does not directly achieve customer satisfaction and continuous improvement. Producing fewer defects through process improvement is the only means of reducing defects.

Quality by Process Control

Defects inevitably add to the production cost and waste resources. Therefore, a business strives for zero defects. The quality management system based on sampling inspections has been replaced by the approach of continuously improving the process. This concept, as pioneered by Deming, moves from detecting defects to preventing them and continuing with process improvement to meeting and exceeding customer requirements on a continuous basis. The continuous cycle of process improvement is based on the scientific method for addressing problems, commonly referred to as the Deming cycle. Deming's approach consists of four basic stages: (1) a plan of what to do; (2) do or carry out the plan; (3) study what has done; and (4) act to prevent errors (or) improve the process. The planning stage consists of studying the current situation, gathering data, and planning for improvement. Related activities include (a) defining the process, its inputs, outputs, customers, and suppliers; (b) understanding customer expectations; (c) identifying problems; (d) testing theories of causes; and (e) developing solutions. In the do stage, the plan is implemented on a trial basis to evaluate a proposed solution and provide objective data. The study stage determines whether or not the trial plan is working correctly and if any further problems or opportunities are identified. In the final stage, act, the final plan is implemented and the improvements become standardised and implemented continuously. This process then returns to the plan stage for further diagnosis and improvement.[3]

The Deming Cycle can enhance communication between the staff involved and help employees to use the wheel to improve processes. Some of the specific tools used to improve processes are control charts, process capability studies, seven (quality control) tools, seven new (quality management) tools, and seven creativity tools (GOAL/ QPC 1997). However, the appropriate tools must be applied for the specified purpose. For example, cause-and-effect diagrams and process flow charts could be more appropriate during the planning stage of the Deming wheel, whereas control charts may be most appropriate during

Figure 2: Framework of Quality Management Approaches in Libraries



the stage of checking.[4]

Framework of Quality Management Approaches in Libraries

Having different characteristics, library services require special approaches of quality management that go beyond the simple adoption of manufacturing techniques for a product. Quality management related to library functions can be viewed in three phases: before service, during service, and after service.[5] Library services ultimately focus on satisfying the information needs of customers. Before services are provided, the technical service departments should have required books and information resources collected and value-added to enhance their value to the customers. Therefore, the customer-oriented library should regard technical services as resource development system to ensure that every customer has resources properly acquired, organised, displayed or accessed. Having direct contact with customers, the public services should be regarded as information service delivery system and focus on providing information to customers accurately, promptly, and responsively to help customers solve problems, and build up customers' knowledge and ultimately enhance their productivity. Administrative management should be regarded as the service support system to coordinate and allocate resources as well as provide support for technical services and public services to satisfy customers' needs, and to evaluate service performance periodically and to continuously improve service quality. Figure 2 shows the quality management approaches and techniques associated with the stages of service delivery in libraries.

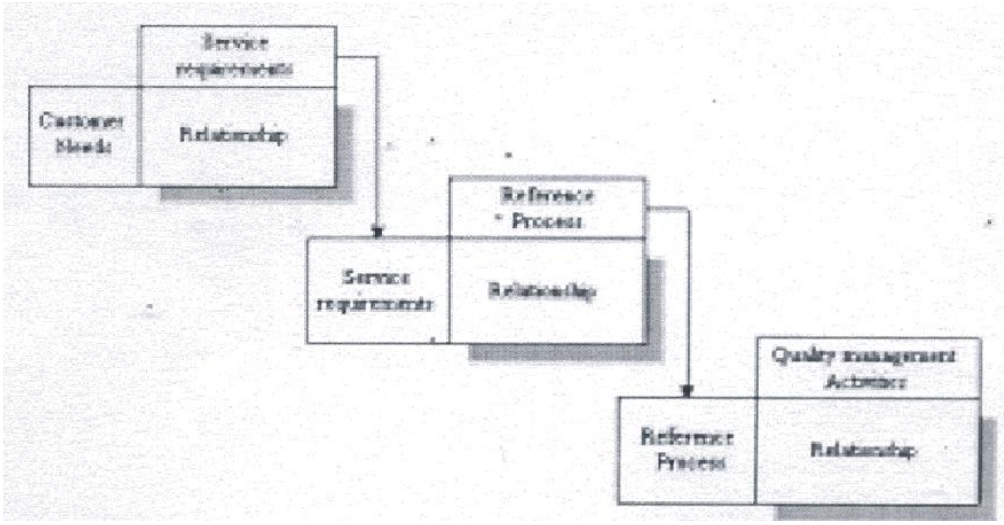
Resource Development System

Largely concerning itself with backstage activities, a resource development system is the off-line preparation for public services and has no direct contact with customers. For services in which the customer need not be present, the service transaction can be de-coupled and standardised. For example, acquisition is considered to be a customised service. Convenient access to Web-accessible public access catalogue (webpac), however, has weaned customers from present interaction with live librarians to interaction via online purchase request and, consequently, only routine order preparation and communication is required. Most activities related to technical services have technical and procedural standards to follow, accounting for why each function is characterised by a high routine and process-orientation. International or domestic rules govern the cataloguing, classification, and information organisation. In addition, standardised practices also exist for acquisition and preservation, e.g. how order requests are to be formulated and transmitted. In fact, many practices in technical services are standardised by actual work routines and formalised based on a detailed and systematic study during library automation. Therefore, the quality management of a resource development system should emphasise the concurrent control of process to ensure that all books and resources have been accurately collected, accessed and value-added appropriately. Quality by process controlis the best quality management strategy for a resource development system.

Information Service System

The information service system is a service delivery system that has direct contact with customers. In circulation, access and reference services,the customer often serves as the co-producer and works with the librarians and the library system to produce a final product which enhances knowledge, skills, or promotes the enjoyment of leisure activities. The service encounter is always initiated by the customer. Therefore, the major function of an information service system is dynamic and customer-oriented. Because of direct interaction with public service librarians, customers require the service to be done right the first time and to be consistent every time. Consequently, quality by design is the best quality management strategy for information service system. Quality management tools that

Figure 3: Quality Functions Development for Reference Services



can be applied are quality function deployment, failure mode and effect analysis, and service blueprinting which is specially designed for effectively managing the service encounter.

Reference service has direct encounters with customers, and the service quality depends highly on the performance of the reference librarians and their interactions with customers. Therefore, the design of reference service can adopt the techniques of quality function deployment.Chang and Hsieh proposed a modified frame-work of quality function deployment for reference service, as shown in Figure 3.[6] There are four phases to facilitate communicating service requirements from the customer to the activities related to quality management of reference service delivery. The first phase is to identify the customer's needs and requirements. The second phase is to define the service requirements and design the co-service system so that the right quality is built in from the very beginning of service design. The third phase consists of process planning which is a matter of selecting the co-service process "best" producing what the customer needs. Phase four involves the planning of the quality management activities. It emphasises translating reference processes into quality management activities in order to ensure quality both before and during the reference en-counter.

The first task of applying QFD to reference services is to identify customer needs, which are descriptions in the customer's own words of the benefits they want the reference services to provide. The opinions posted on the library web site or BBS (Bulletin Board System), customer complaints, records of reference interviews, previous user studies, and so on, will all contribute to the list of customer needs. In reference services, the primary customer needs might be categorised as "good employees," "right answers" and "nice environment." In order to manage the customer needs, the primary needs need to be structured into a hierarchy. For example, the primary need for "good employee" might be elaborated as "good attitude" and "good skills" in serving customers. And the "good attitude" is subdivided into "kind and polite," "does not have to wait," "assists users in looking up information," and "properly dressed." Each customer need is, then, to be met in terms of professional terminology – that is, service requirements. For example, the words "kind and polite" express the customer's concept, but librarians need these words translated into their vocabulary in order to actually build a service delivering standards and quality management activities. In delivering reference service, "kind and polite" may be described in terms of the responsiveness, approachability, attentiveness, and courtesy. The service

requirements of reference services translated from customer needs might be grouped into answer, process, and environment, using an Affinity Diagram. For example, the quality of answer might be evaluated according to two perspectives – results and sources. And the quality of source might be evaluated according to the indicators of credibility, acceptability, accessibility and availability. After the service requirements have been identified and prioritised, the most important requirements must be linked to reference process to design the co-service system to satisfy the customer needs.

Circulation and access service is the major contact between the customer and the library, and is usually the starting point for customers to use all other library services. With information networks, most customers can remotely access the webpac (or) search networked databases. After identifying the availability of certain books or documents, the customer is physically present in the library to check out those books or photocopy the required documents. If the collection or documents needed by the customers are unavailable, the customers can also apply for an interlibrary loan or document delivery service. Encounters between the customer and library are integral and continuous, with each customer possibly encountering many points of services and interacting with varying service facilities and librarians. Therefore, the circulation and access service should be designed by integrating all of the service points to provide seamless services to customers.

A service blueprint is a detailed map or a flow chart of the service process. However, creating a flow chart can only depict the workflow of internal operations from the perspective of the librarian. Such a flow chart neither provides understanding of the interaction between the librarian and the customer; nor can it integrate these encounter points with related activities that support these encounters. Therefore, the concepts of "line of interaction" and "line of visibility" are used in a service blueprint to improve service encounters. Consequently, the service delivery process can be simultaneously viewed from the perspectives of the librarian and the customer. The line of interaction differentiates actions performed by the customer from actions performed by the librarians. Customer actions are placed above the line. Actions performed by the librarians (regardless of whether they are by access services librarians (or) by mechanical (or) automated means are located below the line. These actions are charted on the service path proceeding from left to right. Along the line of interaction, the encounter points, i.e. the points in the service process where the customer receives the access services, can be easily specified. The line of visibility in a service blueprint distinguishes those processes that are visible to the customer from those that are behind the scenes. This concept facilitates the understanding of the interconnection between "below-the-line" and "above-the-line" service processes and the recognition Quality Management Approaches in Libraries and Information Services that the latter processes where the customers' experiences directly depend on the former processes that customers do not experience.[6]

The blueprinting exercise also provides librarians with opportunities to identify potential fail points (for example, books unavailable by customer) and, then, use the failure mode and effect analysis to design "foolproof" procedures to avoid such an occurrence, thereby ensuring the delivery of high-quality services.

The purpose of failure mode and effects analysis is to identify all the ways in which a failure can occur, to estimate the effect and seriousness of the failure, and to recommend corrective design actions. An FMEA usually consists of specifying the following information for each critical component: failure mode (how the component can fail), cause of failure, effect on the product or system within which it operates (safety, down-time, repair requirements, tools required), corrective action, and comments (Dale, Boaden, Wilcon and McQuater 1998).

Service support system

The performance of a customer-oriented library should be evaluated on the basis of quality and quantity. Quantitative evaluation in terms of output measure is the basic element of a statistical report, which is mainly prepared for accountability not for improving service. Meanwhile, customer satisfaction significantly contributes to improving service quality. Based on the evaluation results, the service support system should allocate resources to those services that customers deem as having low satisfaction. In practice, the SERVQUAL model, critical incident techniques and benchmarking can be used to evaluate and improve service quality in library services.[7]

Parasuraman, Zeithaml, and Berry (1985) developed a multiple-item scale called SERVQUAL for measuring the five dimensions of service quality (i.e. reliability, responsiveness, assurance, empathy, and tangibles). A score for the quality of service is calculated by computing the differences between the ratings that customers assign to paired expectation and perception of each of twenty-two statements. This instrument has been designed and validated for use in a variety of service encounters. In addition, many investigators have adapted the SERVQUAL measures to evaluate the service quality of libraries.[6,8,9]

Critical incident techniques can be used to analyse the service encounters between the customer and librarians. Customers and employees are interviewed separately to describe their experiences of the service experience. By doing so, the cause of success or failure of the service encounter can be analysed; the critical factors of service encounters can be identified as well. Correspondingly, staff training and development courses can be designed to enhance the capacity of librarians and library instruction. Moreover, information literacy programs can be designed to equip the capacity of customers.[10]

For every quality dimension, some organisations (not just libraries) have earned the reputation of being "best in class" and, thus, a benchmark for comparison. Benchmarking, however, involves more than comparing statistics. It also includes visiting the leading organisation to learn firsthand how such outstanding performance has been achieved (Garrod and Kinnell 1997; Robertson and Trahn 1997).

Conclusion

Manufacturing-based models and techniques for managing quality may be unproductive unless a clear understanding of the particular nature of the service sector is used to re-focus the model and select an appropriate set or sequence of tools or techniques. This article presents a novel framework for incorporating quality management into library and information services. All libraries can select the appropriate techniques for their program with the framework dimensions proposed herein.

Quality management approaches and techniques can help libraries, but do not always guarantee the outcome. Libraries wanting to continuously improve their service quality and completely satisfy customers must create a customer-oriented culture in their organisation. First, a framework of total quality management must be established for the library by promoting a quality culture before applying any particular technique. The techniques must be considered as an integral part of the total quality system. Importantly, managers must identify and suggest appropriate methods by analysing issues such as organisational culture, competence, skills, missions, and accessibility of resources and information. Above all, what is required is the support and commitment of senior management to make the application of these approaches and techniques meaningful and useful.

References

Brophy P and K Coulling. Quality Management for Information and Library Managers. London: Aslib Gower; 1996.

2. Gilchrist W. Modeling Failure modes and effects analysis. *International Journal of Quality & Reliability Management*. 2010; 10(5): 16–23.
3. Evans JR and WM Lindsay. The Management and Control of Quality. 3rd ed. St. Paul, MN: West Publishing; 1996.
4. Rahman S. Product development stages and associated quality management approaches. *The TQM Magazine*. 1995; 7(6): 25–30.
5. Mitra A. Fundamentals of Quality Control and Improvement. New York: Macmillan; 2011.
6. Chang PL and PN Hsieh. Using quality function deployment to improve reference services quality. *Journal of Library Science*. 1996; 11: 65–96.
7. Pritchard SM. Library benchmarking: old wine in new bottles? *Journal of Academic Librarianship*. 1999; 21(6): 491–6.
8. White MD and EG Abels. Measuring service quality in special libraries: lessons from service marketing. *Special Libraries*. 1995; 86(1): 36–45.
9. Nitecki DA. Changing the concept and measure of service quality in academic libraries. *Journal of Academic Librarianship*. 1996; 22(3): 181–90.
10. Radford ML. Communication theory applied to the reference encounter: an analysis of critical incidents. *Library Quarterly*. 1996; 66(2): 123–37.

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Original Article

Use of ICT among Distance Learners: An Investigation among the Social Science Students in Annamalai University

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Abstract

In the fast-emerging and ever-growing information explosion it is very difficult to retrieve particular information without wasting time. Recent advances in the field of information technology contribute significantly to improve the services of libraries. Now-a-days libraries are not only seen with printed document and non-print document but also with computers. The impact of technologies such as CD-ROMs, multimedia, computer networks, Internet, etc. have lead to a paperless society. With the availability of computers, capable of computing at very high speed and having large disc storage space, it is possible to digitize and store information in the form of high quality graphics, color images, voice signal and video clips at a relatively affordable cost. This paper is an attempt to investigate the use of electronic information resources by the Social Science distance learners of the Annamalai University, India. For this purpose a survey was carried out using questionnaire tool. The findings indicated that 67.33 percent of the respondents are 21-30 age group. The results show that 39 percent access the internet from the Internet café. The study reveals that most of the respondents use of electronic information resources through e-journals. The paper highlighted the various problems and issues involved in handling electronic information resources and has given suggestions to improve the library services to meet the demands of the users.

Keywords: ICT; Open and distance learning (ODL); Social science; Internet; Search engines; CD-ROM; User study.

Introduction

The rapid advancement of information and communication technology (ICT) has brought a revolutionary change in the information scenario giving rise to a number of options to handle varied information sources conveniently and effortlessly as a result of which e-resources have become the most sought after modern library's reserves in satisfying varied needs of students, teachers, and researchers with minimum risk and time. Information technology has changed the world and has become one of the important tools for retrieving information. The electronic information resources have acquired a major portion of library collections. The value and use of information resources, particularly e-resources, have increased with the time. Therefore, there is necessity to make study on the different aspects of e-resources and the issues relating to the use of e-resources by users, more particularly by the faculty members of academic institutions. The present study is an attempt to analyse the use of e-resources by the Library and Information Science distance learners of Annamalai University and to find out the problems and constraints faced by the users in accessing the e-resources with some purposeful suggestions for its development.

Distance education providers

Distance education in India had its genesis in the early 1960s. It started as correspondence education a supplementary method of education to meet the growing demand for higher education. Since then it has expanded rapidly, particularly over the last two decades.

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In 2005, there were 12 open universities [including the Indira Gandhi National Open University (IGNOU)] and 106 dual mode university distance education institutes/ centres in the country, catering to over 2.8 million students. Each year, nearly 1.3 million students register for various courses in these universities.[1] This was considered as an economical and a quick way of increasing enrolment in higher education. The emergence of distance education has been a major development over the last two decades. There are diverse types of providers offering a variety of programmes. The regulatory bodies have little control over them. They operate in different ways and sometimes at cross purposes with each other. The growth has been haphazard and the quality is both unsatisfactory and uneven.[2] Also, there is an anomaly of the major provider - IGNOU being the regulator. The regulator for distance education – the Distance Education Commission (DEC) is a part of IGNOU. This results in conflict of interest with IGNOU getting a preferential treatment over the other distance education providers from the regulator. Nowadays, the boundaries between distance education and on-campus education are in a continuous process of convergence, and it is likely that the future interrelations between them will be marked both by a growing competition and a growing cooperation.

ICT in Open and Distance Learning

The role and the use of the Information and Communication Technology (ICT) in Learners Support Services in Open and Distance Learning (ODL) is a proven fact now. The distance education system responded positively and quickly to the revolution in ICT. It is because of three reasons – the need to reduce the cost of imparting education, to introduce need based educational programmes to a large number of people and to reduce time required for sanctioning new programmes by adopting new flexible nature of administration. ICT is a major factor in shaping the new global economy and producing rapid changes in society. Within the past decade, the new ICT tools have fundamentally changed the way people communicate and do business. They have produced significant transformations in industry, agriculture, medicine, business, engineering and other fields. They also have the potential to transform the nature of education where and how learning takes place, and the roles of students and teachers in the learning process.

Embedding ICT in teaching-learning process is a major initiative in all branches of education; ICT has a particularly important role to play in developing provision for bilingual learners. This is concerned with exploring new ways of working with bilingual learners as well as facilitating more established techniques. The increased use of ICT to deliver and enhance aspects of educational provision is now an emerging practice for all learners belonging to rural and geographically remote and mainly monolingual areas thus having advantages in overcoming geographical barriers. For example video conferencing facilities developed to enable isolated learners to share learning with others in remote areas can also be used to reduce linguistic isolation by allowing same first language learners to discuss and communicate remotely. Learners Support Services are an important part of Distance Educational system. Since the learners in ODL system are not directly involved in the regular classroom teaching-learning process having direct interaction with the teachers regularly, they are provided with adequate Learners Support Services. Such support services include the pre-admission counselling, admission process, provision of study materials both in print media and audio visual forms, subject specific academic counselling, audio visual viewing facilities, participation in teleconferencing, ICT facilities for e-learning, library services, laboratory support facilities, academic career guidance, information services related to rules, regulations, procedures, schedules etc. The role of ICT to speed up the delivery of the support services has now become inevitable for the distant learners. It also considers the shift from mass

produced generic resources to tailored, personalised support and communications and sets this in the context of globalisation of the economy and the changing expectations of students as 'consumers.'

ICT and Learner Support

Distance and open education schemes that have until recently relied mainly on the mailing of written materials, videos, cassette recordings, and radio or TV broadcasting techniques can be augmented, enhanced or replaced by new on-line tools and technologies which have the power to transform the learning environment. Technological developments are coming together which offer the following benefits:

- Through the Internet and worldwide web, new and enlarged sources of information and knowledge that offer teachers and students opportunities for self-development as well as benefits from incorporation into classroom environments.
- Through e-mail and other Internet related feedback mechanisms, greater opportunity to reduce the isolation and time delay associated with distance education.
- Through the extraordinary pace of software development, enriched teaching and learning with enhanced graphics, interaction, animation and visualisation.
- Through lowering telecommunications bandwidth costs and emergence of enhanced cable, wireless and satellite systems, greater opportunities for basic access, video conferencing, on-line interactive learning, and live interaction with the central place of a distance education programme.
- Through community access schemes, more potential to make the benefits of distance education eventually available to lower income people and rural communities.

Sound pedagogical principles would increasingly dictate the need for a more interactive learning environment which was earlier difficult to achieve and also adds considerably to the remotest areas. But it was noted that its deployment requires expensive satellite resources as well as an expensive face-to-face lecture and broadcast system running in parallel. Very Small Aperture Terminal (VSAT) satellite systems are increasingly seen as a powerful distribution mechanism for Internet based resources, with ready access to interactive learning tools and e-mail, especially when linked or packaged with key educational web-site sources, servers and services. VSATs can overcome many of the bandwidth/ delivery speed, limitations of terrestrial systems, particularly in developing countries, and can be especially economic when deployed in an asymmetric multi-casting mode in which high-speed 'downlink' capability is combined with slower speed 'up linking.' These features and the emerges the need of specially designed Distance Education network management and learner software packages of ICTs in distance education especially in the developing world. The use of ICT in distance education actually depends on at least five factors. These are:

- *Geographical Size and Situation:* Large countries with dispersed people and communities have an additional drive or motivation to use communications to deliver educational services cost-effectively.
- *Policy on Telecommunications:* The Internet, IT and Education, Privatisation and Liberalisation of telecommunications and the Internet are improving quality, lowering costs and accelerating innovation around the world. Education policy is often the key to raising awareness and providing leadership in educational use of ICTs.
- *Population and Market Size:* Small markets attract fewer investors and less competition, and offer fewer economies of scale which would lead to price reduction, while regional schemes can overcome that, aggregate market size and achieve scale economies.

- *Per Capita Means:* To address start-up investment challenges and the market affordability to attract commercial players to ease the way to change and growth.
- *Perceived Educational or Developmental needs:* These can relate to educational delivery challenges due to geographic or cultural isolation, or appreciation for the more systematic challenges - such as adapting to the demands of the information economy which can only be seriously addressed with ICTs.

For the purpose of finding out the effectiveness of the use and role of ICT in distance mode, Annamalai University has been chosen as a case study. This is mainly because Annamali University uses a wide variety of ICT materials to reach out to the distance learners/students.

Distance Education in Annamalai University

The University that started with only seven departments in 1929 has over the years developed into a famed institution of higher learning with 49 departments under 10 faculties thus gaining the reputation of being one of the few Institutions in India with all faculties under one roof. The University has the advantage of a well equipped Central Library and Laboratories that provide excellent facilities for undertaking research projects for Ph.D. and Post- Doctoral work. Several research projects, funded by national and international funding agencies including the State and Central Government, has been carried out by the various Faculties, in addition to which close co-operation has been developed with neighbouring industries for promotion of research and training programmes. The University thus promotes the spirit of learning, fulfils the aspirations of enlightenment as aptly observed by Dr.S.Radhakrishnan when he headed the Indian University Grants Commission that "Annamalai University is eminently fitted to be a genuine centre of learning and culture by virtue of its situation and its beautiful campus".

The Directorate of Distance Education established in 1979 offers four hundred and one different programmes of study under the Regular Stream. It is credited with the largest enrolment in India and is well equipped with computer and other infrastructure, adequate teaching faculty and administrative set-up of its own, study centres, computer training centres, etc., to serve its students' clientele in their best interest at their door steps. It has also the unique distinction of offering first in India, Postgraduate Degree Programmes in Applied Psychology, Physics, Chemistry, Zoology, Botany, Bioinformatics and Law through Distance Education mode. The Directorate of Distance Education is also offering the Programmes on Fashion Design, Textile Design, Interior Design, Hotel Management and Catering , B.Ed.,Technology Programmes, Retail Management, Twinning Programme, Programmes on Health Science, Commonwealth Youth Programme, Yoga, Music, Fire and Safety, Pharmaceutical and Taxation Programmes. All the programmes of study offered by the Directorate of Distance Education have the approval of the Distance Education Council, New Delhi.

Review of Literature

A research survey was undertaken by Guruprasad, R and Khaiser Nikam (2010) amongst the 16 prestigious aerospace organisations in Bengaluru. The sampling boundary is restricted to these selected 16 organisations. Out of the 650 questionnaires distributed, 612 were received back, and finally 583 questionnaires suitable for the study were selected. The analysis is based on the responses from the aerospace scientists and engineers. The major observations include: (i) aerospace engineering e-Journals are extremely important to aerospace scientists or engineers and are a major source of scientific and technical information, (ii) the use patterns of aerospace engineering e-Journals amongst the 16 aerospace organisations are not uniform and hence show a heterogeneous nature in their use patterns. Also, the most preferred

aerospace engineering e-Journals in the order of priority and usage (from the responses received) by this 'niche' aerospace engineering community are: Aerospace Science and Technology; Progress in Aerospace Sciences; Journal of Aerospace Engineering; IEEE Transactions on Electronics and Aerospace Systems; Web of Science; Online Journals: Aerospace; Journal of Turbo and Jet Engines; The Journal of Failure Analysis and Prevention (ASM International); European Space Bulletin–ESA; Informatics–J Gate; and International Journal of Satellite Communications and Networking.[3]

According to Kokosalakis (2004) no universal definition of Lifelong Learning exists. However, the author states that the following definitions was adopted and proposed: - Those novel forms of teaching and learning that equip students (learners, individuals) to encounter with competence and confidence, the full range of working, learning and life experiences. Lifelong Learning addresses three fundamental objectives of education: personal development, social cohesion and economic growth.[4] The term "Lifelong Learning" to Kokosalakis is often used as a synonym with adult education, permanent education and/or continuing education. In France, Germany and Spain, for instance, "permanent" or "continuing education" is used instead of Lifelong Learning. In some cases, Lifelong Learning is seen primarily as entailing distinct forms of provision for distinct groups of people. In others, it is more integrated in the totality of higher education. Lifelong learning is a process through which individuals acquire knowledge, skills and values in a range of formal and informal settings, throughout life. It provides formal education, vocational training, and personal development. Lifelong learning enables informed citizens to make positive and rewarding contributions to sustain their environment, their community and the economy (Lugg, 2000). With this definition a lifelong learner may be refers to as an individual who continues to seek new skills and knowledge throughout their lifetime, be it from formal institutions like schools or informal sources like as family, sporting clubs or through hobbies.

Kannappanavar and Rajanikanta's (2008) paper highlights the use of e-learning resources in medical colleges. The study has found that Medical education popularized only after the independence of the country. It is found that majority of the colleges under the study area have e-information resources, e-databases. Almost all colleges under study are also becoming members of a consortium. As far as the infrastructure facilities are concerned, almost all colleges under study have provided very good infrastructure facilities to their libraries to serve their clients effectively.[5]

Varatharajan and Chandrashekara (2007) have found that digital libraries and digitization play an important role in preserving and disseminating knowledge in art and culture, education, science and technology, literature and humanities, media and entertainment, cultural heritage, and history. In India, a substantial number of libraries and information centres have initiated digital library activities. Indian society has created and preserved the resources of traditional and cultural heritage in various forms; however, thousands of ancient books and manuscripts that remain in perishable palm leaves urgently need digitization. This article describes some of the digital libraries and institutional repositories of India.[6]

Lohar and Roopashree (2006) have analyzed the collected data to cover the use of electronic resources and how the electronic resources have improved the academic career of the faculty and also the problems that are faced in using the electronic resources. They conclude that the main intention of the use of electronic resources has been the academic interest of the users.[7]

O'Brien (2004) defines Lifelong learning as the process of keeping mind and body engaged at any age by actively pursuing knowledge and experience. To her, Lifelong learning is the continued educational experience that utilizes non-credit academic courses, educational travel, and community service and volunteerism to fully engage the brain, heighten physical activity, and maintain

healthy social relationships. Lifelong learning is mainly about the training and learning that people can achieve after they leave school. It is a learning that makes it possible for more young people to stay on at school or college. It is an intension for all pupils and students over 14 to gain work-based vocational learning and enterprise experience. Lifelong learning covers the whole range of learning. That includes formal and informal learning and workplace learning. It also includes the skills, knowledge, attitudes and behaviours that people acquire in their day-to-day experiences. Following these definitions it important to point out the relationship between Information literacy and lifelong learning. This discussion is contained in the next section.[8]

Barbara J. Bergman (2005) has discussed the position of electronic resources as a specialty to deal with the management of digital resources, but little has been written about the librarians now working in this specialty. Electronic resources management appears to substantially blur the line between public and technical services.[9]

Sajjad ur Rhamn and Vivian Ramzy (2004) have discussed the electronic resources as vital, but extremely expensive and medical librarian are genuinely concerned with their effective use. It is a widely held view that low awareness and poor skills are among the primary reasons for their under utilization. A questionnaire based survey of health professionals affiliated with three reaching faculties of Kuwait University has been conducted to find out the nature and extent of use and the reasons of low use of these resources.[10]

Singh, S.P (2004) has discussed the usefulness of subject gateways and compares pricing structures of different e-resources. Electronic materials are made available by providers any where in the world. The librarian must act as a knowledge manager applying the skills of collection planning, selection analysis and co-operation in order to manage the intersection of print and e-resources. The web has introduced new resources to collection managers throughout the world. Print media has its own problems, such as gaining access to "gray literature" which is quite difficult as it is largely unidentified, unnoticed or out-of-print quickly.[11]

Objectives of the study

The main objectives of the present study are as follows:

- To find out the type of electronic information resources used currently by the distance education social science students in the Annamalai University and to examine the place of access and the frequency of use of various electronic information resources.
- To find out the frequency of use of various Internet search engines by the respondents.
- To investigate different search methods used by the respondents in retrieving information from electronic information resources.
- To find out the purpose of conducting electronic information searches by the respondents and to identify the difficulties faced by them in the online search.
- To suggest suitable recommendations to improve facilities and services related to the use of electronic information resources.

Methodology

Keeping in view the above objectives in mind, a structured questionnaire was prepared to collect data from the users of electronic information resources in the distance education Social Science students of Annamalai University. Questionnaire contains various questions pertaining to the awareness and use of electronic information resources. For this purpose a total of 340 questionnaires were distributed among the Social Science

Students of distance education mode. Out of 340 questionnaires distributed, 300 valid questionnaires were collected and then data was analysed, tabulated, interpreted and presented in form of this paper. This constitutes 88.23 % (300/340) of the total response.

Data analysis

Analysis of data is the ultimate step in research process. It is the link between raw data and significant results leading to conclusions. This process of analysis has to be result oriented.

Profile of respondents

A study of data in table-1 indicates the age

Table 1: Age of Respondents

Age Range	No. of Respondents	Percentage
21 - 30	202	67.33
31 - 40	98	32.67
Total	300	100.00

wise distribution of respondents. It could be noted that out of the total 300 respondents, 67.33 percent of the respondents are 21-30 age group, remaining 32.67 percent belongs to 31-40 age group.

Personal detail section of the questionnaire provides information regarding the sex and different qualifications as can be seen from Table 2. It is shown in Table 2, 55.33 percent of population studied were males and only 44.67 percent of total were females, who can use electronic information resources available through library for different purposes.

Use of internet

The respondents were asked to indicate their

Table 2: Sex wise distribution of Respondents

Gender	No. of Respondents	Percentage
Male	166	55.33
Female	134	44.67
Total	300	100.00

skill of internet literacy. It is evident from Table-3 that one third of the respondents 42.34 percent have below average level of Internet skill. 33.33 percent of the respondents reported that they have an expert level of Internet skill. Only 24.33 percent admitted that they have an average level of internet skill.

Table 3: Internet Skill Rating

Rating	No. of Respondents	Percentage
Expert	100	33.33
Average	73	24.33
Below average	127	42.34
Total	300	100.00

Place of accessing electronic information resources

Table 4 highlights the location from where the Internet and electronic resources are mostly accessed by the distance learners of Social Science students. A majority of the respondents i.e. 39 percent access the Internet from the café, while 34.66 percent also access from university. Another 26.34 percent access Internet from home.

Table 4: Location for accessing Electronic Information Resources

Location	Number	Percentage
University	104	34.66
Café	117	39.00
Home	79	26.34
Total	300	100.00

Frequency of accessing electronic information resources

Table5 indicates the use of electronic resources. From the table-6, it is clear that most of the respondents 31.34 percent use of electronic information resources through e-journals. 20 percent of respondents use of electronic information resources through e-

Table 5: Most Frequently used E-Resources

Services	Number	Percentage
E-mail	50	16.66
E-journals	94	31.34
E-books	56	18.66
E-Databases	60	20.00
DVD / CD-ROMs	40	13.34
Total	300	100.00

Table 6: Frequency of Electronic Information Resources

Frequency	Number	Percentage
Everyday	62	20.66
2-4 times a week	108	36.00
Once a week	86	28.67
Occasionally	44	14.67
Total	300	100.00

Databases. 18.66 percent of respondents use of electronic information resources through e-books followed by 16.66 percent of respondents use of electronic information resources through e-mail and 13.34 percent respondents use of electronic information resources through DVD/CD-ROMs.

It is observed from the analysis that 36 percent of respondents access electronic information resources 2-4 times a week, 28.67 percent of respondents access once in a week, about 14.67 percent respondents use occasionally. Only 20.66 percent of respondents use electronic information resources daily.

It is observed from the analysis that 42.34 percent of respondents frequently used Google search engines followed by 28 percent of the respondents used Yahoo search engines. Only 30 percent of the respondents use other search engines like Excite, Lycos and Infoseek.

Table 7: Frequency of use of Search Engines

Frequency	Number	Percentage
Google	127	42.34
Yahoo	84	28.00
Excite	32	10.66
Lycos	30	10.00
Infoseek	27	9.00
Total	300	100.00

Purpose of Using Electronic Information Resources

From the Table 8, it is clear that most of the respondents 68 percent use electronic information resources for studying course work. 45.33 percent of respondents use electronic information resources for update subject knowledge. 52.66 percent of respondents use electronic information resources for writing papers and 28 percent

Table 8: Purpose of using Electronic Information Resources

Purpose	Number	Percentage
For studying course work	204	68.00
For update subject knowledge	136	45.33
For research work	78	26.00
For writing papers	158	52.66
Any other works	84	28.00

Note: Total sample exceeds the required size since the questions are multiple choices

of respondents use for other works like exam etc. 26 percent of users using electronic information resources for research work.

Though electronic information resources have become a common source among the academic and research communities, the majority of users stated that they have difficulties to use electronic information resources. The specific problems faced by the users are given in Table 9. It was observed that majority of respondents are not satisfied with availability of enough electronic information resources in their respective subject followed by coverage of electronic information resources is not suited to my research area, lack of training and time consuming.

A question was asked to know the satisfaction level of infrastructure among the users for accessing electronic information resources. It was observed that majority 36 percent of respondents are highly satisfied with the infrastructure provided by the library for accessing electronic information resources at different levels whereas only 11.67 percent of respondents are not satisfied with the same.

Table 9: Difficulties of Accessing Electronic Information Resources

Reasons	Number	Percentage
Not many electronic information resources available in my subject	182	60.66
Coverage on electronic information resources is not suited to my research area	128	42.66
No assistance provided by the information professionals	96	32.00
Time consuming	82	27.33
Lack of training	88	29.33

Note: Total sample exceeds the required size since the questions are multiple choices

Table 10: Satisfaction of Accessing Electronic Information Resources

Level	Number	Percentage
Highly satisfied	108	36.00
Satisfied	65	21.66
Average	92	30.67
Not satisfied	35	11.67
Total	300	100.00

Recommendations

Based on the findings of the study the following suggestions are made:

- The authority must conduct training programmes for users regarding how to use electronic information resources and online databases.
- Awareness should be created to use electronic information resources and online databases to fulfill information needs.
- More computer terminals should be installed in the library for the benefit of users.
- The speed of Internet needs to be increased for quick access to the available e-resources.
- The LIS professionals of the Central Library have to create more awareness on e-resources. In this context the website of library, newsletter of the institution should highlight the available e-resources at the library regularly.
- More fund should be given to acquire electronic information resources.
- Information professionals have to help users to create awareness and use of electronic information resources.

Conclusion

The library environment has currently undergone drastic change in terms of collections and services. The proliferation of e-resources has had a significant impact on the way the academic community uses, stores, and preserves information. The advantages of e-resources have drawn attention of the library users to a great extent. Accordingly, these resources have occupied a significant place in the collection and budget of almost all libraries. Distance learners attitudes seem to be very positive towards e-resources for their study and the role of libraries as gateway to provide assistance in accessing these resources. The study showed that Internet has radical impact on the changing higher education environment. It is interesting that Internet use among social science distance learners at the Annamalai University is much higher than expected. The other issue was lack any formal training about how to locate these resources by saving time and efforts. Slow speed, lack of computers, lack of time, and lack of access from home are found to be the major problems. For this purpose, the Annamalai University needs to improve its IT infrastructure, including providing distance access. The use of electronic information sources for study and research purposes must be encouraged and proper training should be provided.

References

1. Garg Suresh, Venkaiah Puranik, Chambi and Panda Santosh and others (eds). Four Decades of Distance Education in India: Reflections on Policy and Practice. New Delhi: Viva Books; 2006.
2. NIEPA. Report of the National seminar on Privatization and commercialization of higher education on May 2, 2006. New Delhi: National Institute of Educational Planning and Administration; 2006.
3. Guruprasad, R and Khaiser Nikam. E-Journals and their Usage Patterns Amongst the Indian Aerospace Scientists and Engineers in Bengaluru. *DESIDOC Journal of Library & Information Technology*. 2010; 30(6): 31-38.
4. Kokosalakis N. Lifelong learning: Implications for universities.2002. New Perspectives for learning- Briefing Paper 20. Available: http:// www.E:%20Document/My%20Web2/ [accessed 10 October 2011].
5. Kannappanavar BU, and Rajanikanta ST. Effective Use of E-Learning Materials in

Medical College Libraries in Karnataka: A study. *SRELS Journal of Information Management.* 2008; 45(4): 437-454.

6. Varatharajan N & Chandrashekara M. Digital Library Initiatives at Higher Education and Research Institutions in India. *Library Philosophy and Practice*. 2007.
7. Lohar MS and Roopashree TN. Use of electronic resources by faculty members in B.I.E.T., Davanagere: a survey. *SRELS Journal of Information Management.* 2006; 43(1): 101-112.
8. O'Brien, S.(2004). The benefits of lifelong learning for adults 50-plus. Available: http://staff.cni.org/~clifford/papers/cni-info-it-lit.html [accessed 2 October 2011].
9. Barbara J Bergman. Looking at electronic resources librarians. Is there gender equity within this emerging specialty? *New Library World.* 2005; 106(1210/1211): 116-127.
10. Sajjad ur Rehman and Vivian Ramzy. Awareness and use of electronic information resources at the health sciences center of Kuwit University. *Library Review.* 2004; 53(3): 150-156.
11. Singh SP. Collection management in the electronic environment. *The Bottom Line : Man Library Finances.* 2004; 2: 55-60.

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Original Article

Fundamentals of Virtual Learning Environments (VLE) and its Components

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Abstract

The merging of robust learning technology with the Internet offers a new breed of learning experiences, in particular the development of Virtual Learning Environments (VLEs). This papers deals with the features, advantages, theoritical backgrounds, Various subsystems, components and tools learning and learning content management systems of Virtual Learning Environments. VLE @ DLIS, BU is a prototype of virtual earning environments in the Department of Library and Information Science (DLIS), The University of Burdwan (BU) using open source learning management software Moodle .

Keywords: Virtual learning environments (VLEs); Social contact theory; Social constructivism; Contact theory; Learning management system (LMS); Content management system (CMS); Learning content management system (LCMS); Learning objects (Los); Learning object metadata.

Introduction

The merging of robust learning technology with the Internet offers a new breed of learning experiences, in particular the development of Virtual Learning Environments (VLEs). Virtual learning environments can be described as online teaching-learning-evaluation domains that permit synchronous and collaborative interaction among teachers and students, while also providing asynchronous learning resources for individual use by students at any time. VLEs offer a learning system, made up of many components, with all the advantages of computer-based learning but with the added advantages of access and use over the Internet as platform.

Joint Information Systems Committee's (JISC's) definition seems the most widely accepted:

"A VLE is an electronic system that can provide online interactions of various kinds that can take place between learners and tutors, including online learning".[1]

Simply, VLE can be defined as the Web-enabled multimedia-driven learning system integrated with synchronous and asynchronous communication tools. While originally created for distance education, VLEs are now most often used to supplement traditional face to face classroom activities, commonly known as Blended Learning.

Such VLE systems are sometimes also recognized by different synonymous terms such as:

Learning Management Systems (LMS), Course Management Systems (CMS), Learning Content Management Systems (LCMS), Managed Learning Systems (MLE), Learning Support Systems (LSS), Learning Platform (LP).

Features & Advantages of VLE

The Virtual Learning Environment provides an integrated learning environment based on Virtual library technology. Learning materials are explicitly organized, accessed, and presented in a way that shows objective scientific concepts and their interrelationships.

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In VLE, administrators, teacher as well as users can join, create, use, and re-use learning materials in the universe of subject fields, including classroom, laboratory, and self-guided environments. The main features of VLE are:

- Interactive communication Tools for teaching and learning
- Teaching and learning are in world wide web
- Additional learning system wtih traditional learning system
- Digital library system and electronic resources are the part of VLE
- One copy of the documents could be viewed by any number of users simultaneously.
- Large number of course can be delivered for a large number of users at a particular point of time at a glance across a globe.

Why VLE

Most of the VLE researchers identified that why Virtual learning is important in this ICT era due to the following reasons:

- Self-directed learning
- Accommodates multiple learning styles.
- World wide access to the users
- 24 * 7 support systems
- Fosters greater student interaction and collaboration
- Computer and Internet skills enhancement of next generation users
- greater student-instructor intercation
- Arrays of theoretical support system
- VLE is the future of university learning support system for their on-line course delivery system

Theoretical Foundation of VLE

Social contact theory: Allport's (1954) Social Contact Theory underneath of Co-operation Ireland's programmes deals with reducing inter-group prejudice or bias is through contact between the groups under optimal conditions. The optimal conditions include: (1) equal status between the groups in the situation; (2) common goals; (3) no competition between the groups; and (4) authority sanction for the contact. According to his point of view, "prejudice will decrease if two groups with equal status have contact. But prejudice will increase or remain high if it occurs under conditions of status inequality, in which one group is dominant and the other subordinate."[2]

Social Constructivism

Social Constructivism, the Co-operations Ireland's work, emphasises how meanings and understanding grow out of social encounters. The learner is actively engaged in a joint enterprise with the constructing of the meaning. Context is necessary and the learner actively makes the meanings outside of the head first and they are then internalised. Social Constructivism was first laid down by LeonVygotsky in his theory of Zone of Proximal Development.[3] His work was later further developed by Bruner.[4]

Contact Theory and the Internet

Brown (2000) explained the contact hypothesis as a very significant idea in the history of Psychology.[5] Strong empirical support has shown that contact, under the prescribed conditions, leads to a positive change in attitude, which can be consistently achieved. Pettigrew and Tropp (2000) found that it was not necessary for all 4 conditions to be met for prejudice to be reduced and mere contact can be sufficient conditions for reduction of bias.[6] However, it is agreed that the greater number of conditions present, the greater the degree of prejudice reduction. It has been suggested that there are significant barriers to the 'Contact Theory' which include: (1) practicality [7] (2) anxiety [8]and (3) generalisation.[9]

The pedagogy is a mixture of many Face to Face activities blended in with On-line Learning Tasks in an innovative and creative programme environment which is a mixture of structured, semi-structured. Marsh (2001) describes blended learning as "Essentially, blended learning combines eLearning tools (everything from video streaming over the web to email) with traditional classroom training to ensure maximum effectiveness."[10]

Learning Management System (LMS) or Content Management System (CMS)

Learning Management Systems (LMS) (Learning Management System, 2004) or Content Management System (CMS) provide a means to manage the delivery of e-learning courses. LMS' are learner and organizational focused. They are concerned with handling the logistics of learners that are in a training system. LMS' manage the learning activities, their sequence, and the competency mapping of courses.

Learning Content Management System (LCMS)

Learning content management system (LCMS) is a related technology to the learning management system (e.g., WebCT, Moodle), focused on the development, management and publishing of the content that will typically be delivered via an LMS. An LCMS is a multi-user environment where developers may create, store, reuse, manage, and deliver digital learning content from a central object repository. The LMS cannot create and manipulate courses; it cannot reuse the content of one course to build another. The LCMS, however, can create, manage and deliver not only training modules but also manage and edit all the individual pieces that make up a catalog of training. LCMS applications allow users to create, import, manage, search for and reuse small units or "chunks" of digital learning content and assets, commonly referred to as learning objects. These assets may include media files developed in other authoring tools, assessment items, simulations, text, graphics or any other object that makes up the content within the course being created. An LCMS manages the process of creating, editing, storing and delivering e-learning content, ILT materials and other training support deliverables such as job aids.

Learning Management Systems (LMS) vs Learning Content Management Systems (LCMS)

Some systems have tools to deliver and manage instructor-led synchronous and asynchronous online training based on learning object methodology. These systems are called Learning Content Management Systems or LCMSs. LCMSs provide tools for authoring and reusing or re-purposing content called mutated learning objects (MLO) as well as virtual spaces for student interaction (such as discussion forums, live chat rooms and live web-conferences). In spite of this distinction, the term LMS is often used to refer to both an LMS and an LCMS, although the LCMS is a further development of the LMS. Computer Learning Content Information Management System (Clcims) is used to create a uniform phonetic way of referencing any learning system software based on advanced learning technology methodology.

In real meaning, LMS is software for planning, delivering, and managing learning events within an organization, including online, virtual classroom, and instructor-led courses. LMS can simplify global certification efforts, enable entities to align learning initiatives with strategic goals, and provide a means of enterprise-level skills management. The focus of an LMS is to manage students, keeping track of their progress and performance across all types of training activities. It performs administrative tasks, such as reporting to instructors, HR and other ERP systems but isn't used to create course content.

There are so many open source software available in the web. Some applications are as follows:

A Tutor (Open Source Web-based Learning Content Management System), Claroline (free LMS),

Dokeos (e-learning and course management

web application), ILIAS (Open Source Learning

Management System), Moodle (Open Source Course Management System). Some closed systems are Blackboard, Desire2Learn, WebCT, etc.

Components of VLE

Learning Objects

As per Higgs (2003) point of view, the essential characteristics of learning objects are as follows:

- *Independent:* Learning objects are discrete and coherent chunks of information, activities or assessment, which are self-contained in that they can contain a complete learning sequence, and don't rely on other material in order to make sense.
- *Shareable/ Reusable:* Learning objects are small stand alone, reusable components that can be assembled to provide resources in various learning environments, i.e., content developed in one context being transferable to another context. It is this notion of share ability, which is fundamental to leveraging any advantage in using learning objects.
- *Interoperable:* Objects must be interoperable that is: content from multiple sources must work with different learning systems. In order to do this they must be designed to conform to world standards.
- *Instructional Value:* In order to be defined as a learning object, there must be some intrinsic instructional value. A learning object is not just a knowledge or information object. It should result in a complete learning sequence, objective, skill or competency.
- *Discoverable:* Objects must be able to be found. This usually entails tagging them with appropriate descriptive metadata that will focus on linguistic semantics.
- *Context:* In order to maximize their reusability, learning objects are required to minimize the amount of information specific to a given context. However this is often difficult; again we need to accept that some latitude in that learning object can include context-related information either within the object or by some external association to it.[11]

Virtual Communication tools

In VLE, there are various tools to fulfill the needs of the e-students. The communication tools are divided into two categories. First one is asynchronous and the other is synchronous tools. The asynchronous tools consist e-mail, Discussion Forum, etc. And in synchronous tools consist Internet Audio Conferencing, Video Conferencing, Multimedia Conferencing System, Instant Messaging, etc.

Learning Object Metadata

Metadata is data about data. Metadata is information that describes content. Metadata are of three types. Theses are as:-

Descriptive metadata is stored in a database. Information such as the title, author, producer, date of production, and a description of the content are just a few examples of metadata that is normally stored in the database.

Objective Metadata are factual data, most of which can be generated automatically – things such as physical attributes, date, author, operational requirements, costs, identification numbers, and ownership.

Subjective Metadata are the more varied and valuable attributes of a learning object determined by the person or group who creates the metadata, such as subject, category, and description.

More over, metadata is needed for implementation of the semantic web. Metadata can either be embedded in the resource it describes, or be located separately from it. Metadata can be generated either manually or automatically, but is most often structured according to semantically

understood elements – access points such as author, title and location.

Learning Object Metadata is a data model, usually encoded in XML, used to describe a learning object and similar digital resources used to support learning. Learning Object Metadata standards focus on the minimal set of attributes needed to allow these Learning Objects to be managed, located, and evaluated. The purpose of learning object metadata is to support the reusability of learning objects, to aid discoverability, and to facilitate their interoperability, usually in the context of online learning management systems (LMS) as well as learning object digital repository/library. However, there is more than one approved standard used to describe the properties of learning objects. Different Learning Object Repositories try to address different needs.

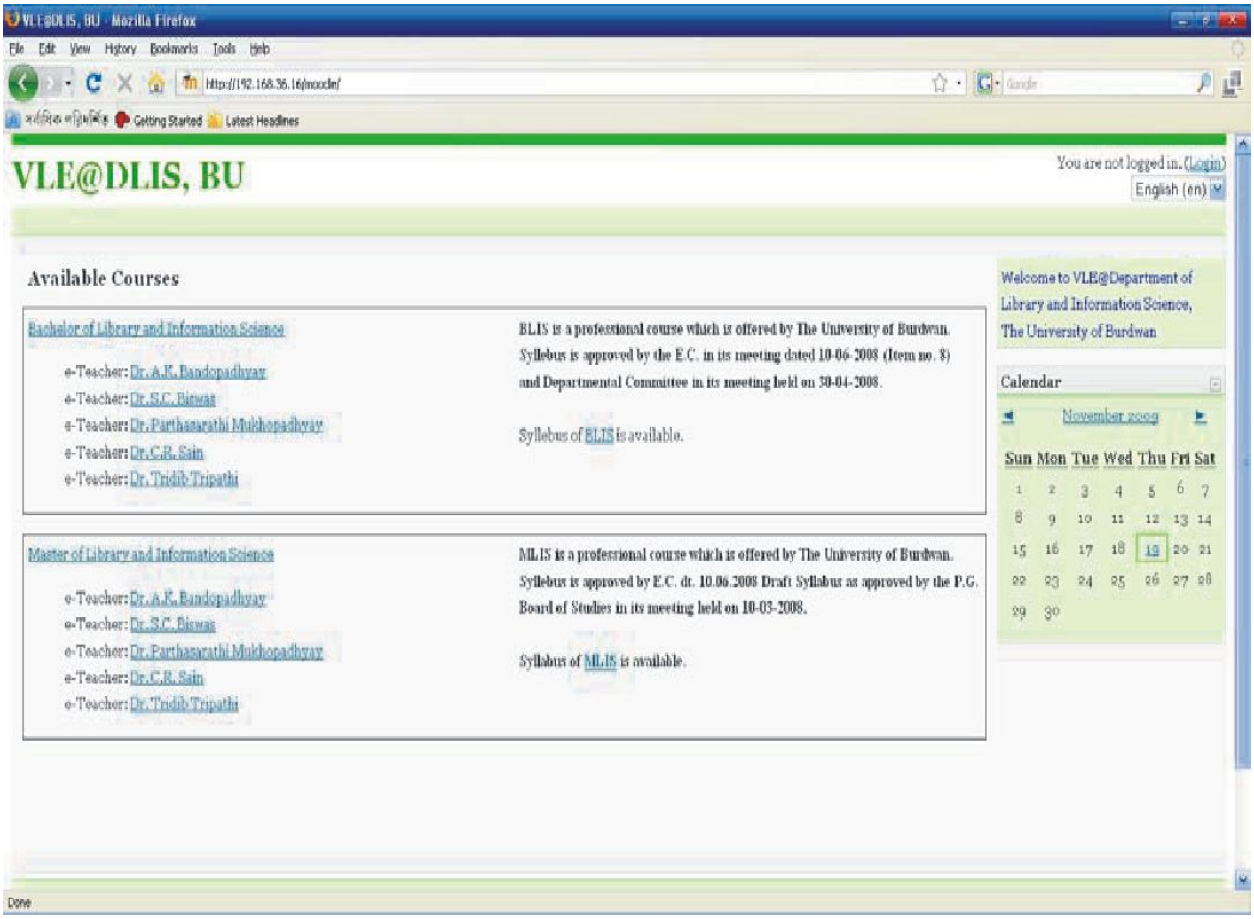
The standards of Learning Object Metadata are Instructional Management Systems Project (IMS), Advanced Distributed Learning Initiative (ADL) and SCORM, Alliance of Remote Instructional Authoring and Distribution Networks for Europe (ARIADNE), Dublin Core Metadata Initiative, IEEELearning Technology Standards Committee (LTSC) Learning Object Metadata-IEEE 1484, Canadian Core Learning Object Metadata (CanCore), World Wide Web Consortium (W3C), METADATA. The available LO metadata standards application profiles are ADL SCORM, ARIADNE, SingCore, UK Curriculum online, Australian Learning Federation, Standard (IEEE/ISO) and others.

Subsystems of VLE

In, VLE there are three subsystems consist. These are

- *e-Administrator:* Administrator is the super user of VLE @ DLIS, BU. Administrator structured and developed DLIS courses in BU. It is very difficult to create various courses in VLE by the administrator in university like distributed system. So privilege of course creation is given to e-teacher and also choice based global users. The ultimate roles of administrator are course management, users management, activity settings, appearance tinkering, system and security settings, etc.
- *E-tutor:* E-teaching has changed teacher's role as the owner of the knowledge, E-teacher becomes "a learning facilitator", that is, the one who offers the learner the strategies to fulfill the understanding of the materials on the subject. The e-teacher adopts the following functions: design, manage, moderate, mediate (in a conflict), and assess final results. That means, he/she is not the main character in the activity since this role is transferred to the learners (from teaching to learning). The ultimate role of the teacher is not to present the content of the subject (lecture) but to coordinate the implementation of the activity. Important consideration should be paid on the pedagogical objectives of the activity, as well as, having the act clearly designed.
- *E-student:* The e-student's role is different. It is more active than in a physical learning environment, though s/he is also autonomous and individual. There is a tendency to promote isolate learning environments, which foster neither critical minds nor team work. The latter is essential in the training of any professional in 21st century. E-students have to be able to adopt the following functions:
  - To take an active and direct part in the knowledge building;
  - To find their course;
  - To search their learning resources;
  - To answer their assignment;
  - To play quiz;
  - To communicate with the other members using communication tools;
  - To organise the internal roles of VLE, and other.

Homepage of VLE @ DLIS, BU



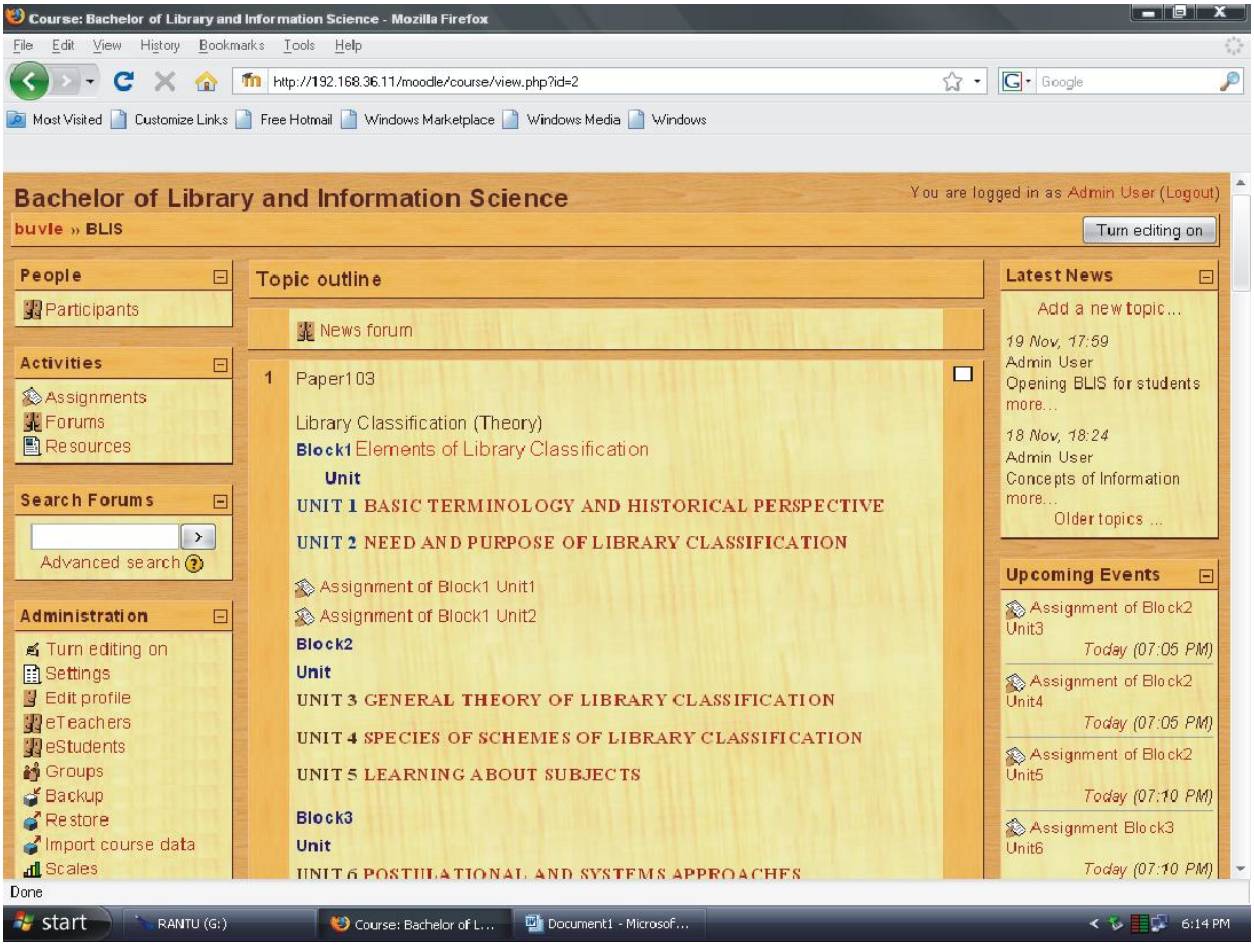
Managing Components for VLE @ DLIS, BU

VLE @ DLIS, BU is a prototype of virtual earning environments in the Department of Library and Information Science (DLIS), The University of Burdwan (BU) with the help of open source learning management system Moodle. In this project, BLIS & MLIS courses are designed and developed in addition to traditional learning systems. In this way, blended learning will be evolved in the University of Burdwan. M. Phil of LIS course will also be introduced in this system. This is an ongoing project. In this system, VLE acts as a front end layer learning system, and Digital Archiving Software used as back end layer database management system. In Digital archiving software, an open standard learning objects metadata schema is incorporated. Learning objects repository is developed using IDR software with the help of related learning objects from various open courseware according to the syllabus of BLIS & MLIS of the DLIS, BU. In BLIS & MLIS course, hierarchical course structure is developed according to paper wise. In each paper is divided into unit. In each unit, topics are related with other open courseware and linked with either handle of learning objects or direct location of learning objects in digital archiving software within the VLE system.

Conclusion

One of the basic requirements for education in the 21st century will be to prepare students for participation in a knowledge-based economy; knowledge will be the most critical resource for social and economic development. A nice byproduct of online learning is that in addition to knowledge acquisition, students learn about the technology through its use. In

Course Programme of LIS in VLE @ DLIS, BU



these virtual environments the learning experience can be flexible, more accessible and inclusive. This integrated prototype VLE @ DLIS, BU is developed as a support system for traditional learning environment of the DLIS at the University of Burdwan.

References

1. Joint Information Systems Committee (JISC), (2003). Virtual and Managed Learning Environments, Retrieved on October 25, 2008 from www.jisc.ac.uk/ index.cfm?name=issue_vle_mle. Vygotsky, L. S. (1962). *Thought and language* Cambridge [Mass]: M.I.T. Press.
2. Allport, Gordon W. The Nature of Prejudice. Reading, MA: Addison-Wesley; 1954.
3. Vygotsky, LS. Thinking and Speech. In RW Reiber & AS Carton (eds.). The collective works of LS Vygotsky, (N Minick, Trans). New York: Plenum Press; 1962.
4. Bruner J. *Actual Minds, Possible Worlds*. Cambridge, MA: Harvard University Press; 1986.
5. Brown RJ. *Group processes. Dynamics within and between groups*. (2nd ed.). Oxford: Blackwell; 2000.
6. Pettigrew Thomas F, Tropp Linda R. A Meta-Analytic Test of Intergroup Contact Theory. *Journal of Personality and Social Psychology*. 2006; 90(5): 751-783.
7. Trew, K. *Catholic-Protestant contact in Northern Ireland*. In: M Hewstone; RJ Brown (Eds.). Contact and conflict in intergroup encounters. Oxford: Blackwell; 1986, 93–106.
8. Bodenhausen, GV. Stereotypes as judgemental heuristics: Evidence of circadian variations in discrimination. *Psychological Science*. 1990; 1(5):

309–322.

9. Hewstone, M & Brown, RJ. *Contact is not enough: An intergroup perspective on the Contact Hypothesis.* In: M Hewstone; RJ Brown (Eds.). Contact and conflict in intergroup encounters. Oxford: Blackwell; 1986, 1–44.
10. Marsh J. (2001). *How to Design Effective Blended Learning*. From Brandon-Hall.com Retrieved on 26th July, 2012.
11. Higgs P, Meredith S & Hand, T. Technology for Sharing - A research project to inform VET Australia about Learning Objects and Digital Rights Management including systems and metadata to support them. Flexible Learning Leader 2002 Report, Australian National Training Authority (ANTA); 2003.

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Original Article

Shodhganga-Windfall for Researchers: Role of Indian Universities in its Development

S.S. Joshi

Abstract

The progress of any country depends on the research activities of the country. The main cause of the development of the developed countries is the research initiatives taken by the Government of that country. Research brings the new things for the concerned country. In India also Government is taking initiative to promote research activities. To provide financial assistance to the state and central Universities, University Grant Commission was set up by the Government in the year 1956. The UGC further set up INFLIBNET to promote research activities in the universities and institute of higher education. INFLIBNET provide financial support and technical assistance to develop infrastructure in the universities and institutes to promote research activities.Shodhganga, ShodhGangotri, N.LIST are such initiatives of INFLIBNET which has changed the scenario of research in the country. The paper discusses the Shodhganga project of INFLIBNET for the promotion of research in the country.

Keywords: Research; UGC; INFLIBNET.

Introduction

Research is a process to develop something new. It is action from identified to unidentified. Universities are established with the objective to develop research activities in the country.

Research can be stated as the input to the prevailing facts for its development.It can be stated as the search of reality through experiment, study and observation. In brief research is search of knowledge through the organized way of finding solution to the problem.[1]

This is the process to attain knowledge about any phenomena. In one hand it adds the knowledge of the society and on the other hand it sorts out the problems. It can be further classified into pure and applied research.[2]

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It can be divided in to three parts.

1. Fact finding
2. Critical interpretation
3. Complete Research

In India after the independence in 1948 the education commission came in to existence under the chairmanship of Dr. S. Radha Krishnan. The main objective of the commission was to review the education system and to submit a report with respect to university education system and give suggestions for the improvement keeping in view the future growths. It suggested that a committing should be constituted on the patron of university grant commission of United Kingdom.Reputed academicians be appointed as the head and member of the commission. The Indian government took the decision that the cases related to the allocation of grants to centre and state universities be transferred to university grant commission. With this attitude of the Government, University Grant Commission came into existence in1956.It was inaugurated by the Mulana Abul Kalam Azad. To spread educational activities in the country University grant commission set up six regional centres

at Kolkata, Pune, Hadrayabad, Bangalore, Bhopal and Guwahati. The main office of UGC is situated at New Delhi.[3]

To modernize Indian university and college libraries in the country UGC set up Information library network.It is an autonomous body of UGC. It's headquarter is situated in Gujarat. It started working independently in the year 1996. It took the initiatives to connect all the university libraries with speedy network. To develop the research activities in the country through information communication technology INFLIBNET came forward with the following programmes:

1. Shodhganga
2. N-List
3. ShodhGangotri [4]

Shodhganga

This is repository of thesis submitted by the research scholars in the universities. The Shodhganga make this thesis available to the entire scholastic community including research scholars and faculty members. The entire theses are available on public domain. The list of contributing universities is shown in table1.

How to Use Shodhganga

To use the Shodhganga a user must have computer system along with internet connection. To see the repository of shodhganga the user is required to visit the website.The web site is user friendly.No training is required for the use of this site. The user with the little knowledge of computer related activities can easily access the site and satisfy the requirement. The user needs to click on the link http://shodhganga.inflibnet.ac.in/ .[5] The following screen will appear as shown in fig 1.

The user can see the full contents of any theses contributed by universities. For example if any user want to see the theses submitted in Gujarat university. He or she just need to click on Gujarat university.The screen will appear as shown in fig 2.

The users can view the list of thesis deprtment vise. They can also view the thesis by adopting the searching technique according to their requirement as presented in figure 2 i.e Key word, title research/guide etc. Suppose the user want to see the thesis submitted by the research scholar in the department of botany in Gujarat university. On a single click on the department of botany the user will find out the thesis contributed by Gujarat university in shodhganga. To view the titles of the thesis user need to click on the search tool "Title". All the titles of the thesis of the department of the botany shall be displayed on the screen.When user clicks on the title, all the contents of the thesis appear on the screen. User can watch the contents as per the requirement. Facility of download and print has also been provided by the INFLIBNET center.

Till 27-01-2014 only 155 universities have signed MOU with INFLIBNET. Many universities are in process. There are 307 state universities and 44 central universities in India. The list of state universities is given in table 2.

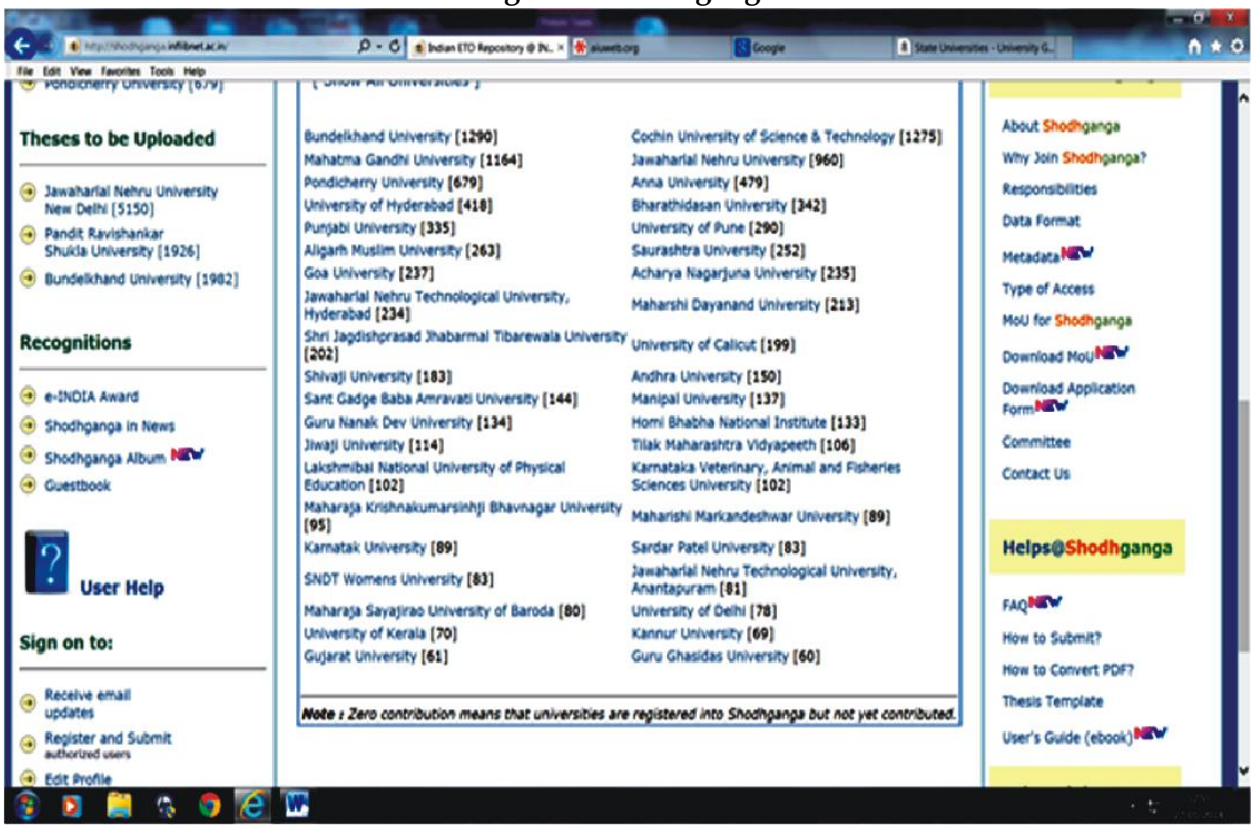
The table 2 clearly shows that highest no. of universities are in the state of Andhra Pradesh and lowest in Goa.

The list of central universities in India is given in table 3.

It is very strange that only 40 universities have contributed their thesis so far. Maximum 6 universities out of 20 universities are contribution of Maharashtra. Only single university is contributing from Chhattisgarh, Goa, Haryana, Pondicherry and Himachal Pradesh. The table 4 clearly demonstrates the number of contributing universities out of total universities in each state/U.T.

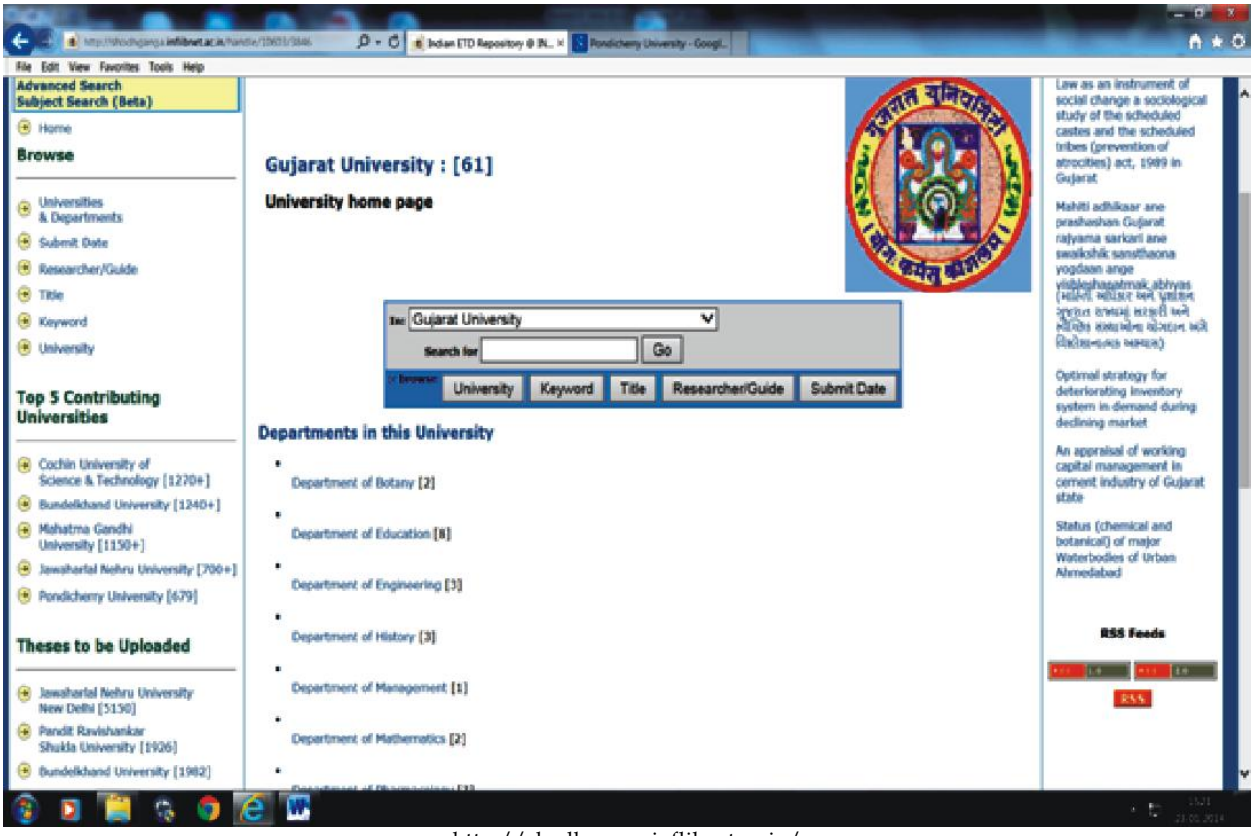
Still there are number of universities which are contributing up to maximum extent. Bundelkhand University, U.P. and Cochin University of Science & Technology, Cochin have contributed maximum thesis i.e. 1290 and 1275 respectively.

Figure 1: Shodhganga



http://shodhganga.inflibnet.ac.in/

Figure 2:Gujarat University



http://shodhganga.inflibnet.ac.in/

Table 1: The List of Thesis Contributing Universities

Sr. No.	University	State/UT
1.	University of Hyderabad	Andhra Pradesh
2.	Jawaharlal Nehru Technological University, Hyderabad	Andhra Pradesh
3.	AcharyaNagarjuna University	Andhra Pradesh
4.	Andhra University	Andhra Pradesh
5.	Jawaharlal Nehru Technological University, Anantapuram	Andhra Pradesh
6.	Guru Ghasidas University	Chhattisgarh
7.	Jawaharlal Nehru University	Delhi
8.	University of Delhi	Delhi
9.	Goa University	Goa
10.	Gujarat University	Gujarat
11.	Maharaja Krishnakurmarsinhji Bhavnagar University	Gujarat
12.	Maharaja Sayajirao University of Baroda	Gujarat
13.	Saurashtra University	Gujarat
14.	Sardar Patel University	Gujarat
15.	MaharshiDayanand University	Haryana
16.	Maharishi Markandeshwar University	Himachal Pradesh
17.	Karnatak University	Karnataka
18.	Karnataka Veterinary, Animal and Fisheries Science University	Karnataka
19.	Mahatma Gandhi University	Kerala
20.	Cochin university of Science & Technology	Kerala
21.	University of Kerala	Kerala
22.	University of Calicut	Kerala
23.	Kannur University	Kerala
24.	Lakshmibai National University of Physical Education	Madhya Pradesh
25.	Jiwaji University	Madhya Pradesh
26.	Shivaji University	Maharashtra
27.	SantGadge Amravati University	Maharashtra
28.	University of Pune	Maharashtra
29.	HomiBhabha National Institute	Maharashtra
30.	SNDT Women's University	Maharashtra
31.	Tilak Maharashtra Vidyapeeth	Maharashtra
32.	Pondicherry University	Pondicherry/Puducherry
33.	Punjabi University	Punjab
34.	Guru Nanak Dev University	Punjab
35.	Manipal University	Rajasthan
36.	ShriJagishprasadJhabarmalTibrewala University	Rajasthan
37.	Bharathidasan University	Tamil Nadu
38.	Anna University	Tamil Nadu
39.	Aligarh Muslim University	Uttar Pradesh
40.	Bundelkhand University	Uttar Pradesh

Table 2: The List of State Universities in India

Sr.No.	Name of State/UT	No. of Universities	Sr.No.	Name of State/UT	No. of Universities
1	Andhra Pradesh	33	12	Kerala	12
2	Assam	10	13	Madhya Pradesh	18
3	Bihar	15	14	Maharashtra	20
4	Chhattisgarh	12	15	Orissa	13
5	Delhi	5	16	Punjab	9
6	Gujarat	22	17	Rajasthan	17
7	Haryana	10	18	Tamil Nadu	20
8	Himachal Pradesh	4	19	Uttar Pradesh	23
9	Jammu and Kashmir	6	20	Uttarakhand	7
10	Jharkhand	7	21	West Bengal	20
11	Karnataka	23	22	Goa	1

http://www.ugc.ac.in/stateuniversity.aspx

Table 3: The List of Central Universities in India

Sr. No.	Name of State/U.T.	No. of central Universities	Sr.No.	Name of State/U.T.	No. of central Universities
1	Andhra Pradesh	4	14	Orissa	1
2	Assam	2	15	Punjab	1
3	Bihar	2	16	Rajasthan	1
4	Chhattisgarh	1	17	Tamil Nadu	2
5	Delhi	5	18	Manipur	2
6	Gujarat	1	19	Meghalaya	1
7	Haryana	1	20	Mizoram	1
8	Himachal Pradesh	1	21	Nagaland	1
9	Jharkhand	1	22	Sikkim	1
10	Karnataka	1	23	Puducherry	1
11	Kerala	1	24	Uttar Pradesh	4
12	Madhya Pradesh	2	25	Uttarakhand	1
13	Maharashtra	1	26	West Bengal	1

http://www.ugc.ac.in/centraluniversity.aspx

The list of contributing universities along with their contribution is detailed in table 5.

The table 5 shows that out of 307 state universities and 44 central universities only 40 universities of 16 states /U.T. are contributing to the shodhganga project of University Grant Commission. This is not an encouraging situation. University Grant Commission should take necessary steps against such universities to force them to contribute their thesis in this project.

Table 4: Thesis Contributing Universities of each State

Sr. No.	State	No. of universities	No. of contributing state universities/UT	No. of contributing central universities
1.	Andhra Pradesh	33	5	4
2.	Chhattisgarh	12	1	1
3.	Delhi	5	2	5
4.	Goa	1	1	---
5.	Gujarat	22	5	1
6.	Haryana	10	1	1
7.	Rajasthan	17	2	1
8.	Karnataka	23	2	1
9.	Kerala	12	5	1
10.	Madhya Pradesh	18	2	2
11.	Maharashtra	20	6	1
12.	Punjab	8	2	1
13.	Pondicherry	1	1	1
14.	Himachal Pradesh	4	1	1
15.	Tamil Nadu	20	2	2
16.	Uttar Pradesh	23	2	4

http://shodhganga.inflibnet.ac.in/

Table 5: List of Thesis Contributing Universities along with Their Contribution

Sr. No.	Name of University	Number of Thesis	Sr. No.	Name of University	Number of Thesis
1.	AcharyaNagarjuna University	235	21	Maharaja Krishnakurmarsinhji Bhavnagar University	95
2.	Aligarh Muslim University	263	22	Maharaja Sayajirao University of Baroda	80
3.	Andhra University	150	23	Maharishi Markandeshwar University	89
4.	Anna University	479	24	MaharshiDayanand University	213
5.	Bharathidasan University	342	25	Mahatma Gandhi University	1164
6.	Bundelkhand University	1290	26	Manipal University	137
7.	Cochin University of Science & Technology	1275	27	Pondicherry University	679
8.	Goa University	237	28	Punjabi University	335
9.	Gujarat University	61	29	SantGadge Baba Amravati University	144
10.	Guru Ghasidas University	60	30	Sardar Patel University	83
11.	Guru Nanak Dev University	134	31	Saurashtra University	252
12.	HomiBhabha National Institute	133	32	Shivaji University	183
13.	Jawaharlal Nehru Technological University, Anantapuram	81	33	ShriJagdishprasadJhabarmalTibrewala University	202
14.	Jawaharlal Nehru Technological University, Hyderabad	234	34	SNDT Women's University	83
15.	Jawaharlal Nehru University	960	35	Tilak Maharashtra Vidyapeeth	106
16.	Jiwaji University	114	36	University of Calicut	199
17.	Kannur University	69	37	University of Delhi	78
18.	Karnatak University	89	38	University of Hyderabad	418
19.	Karnataka Veterinary, Animal and Fisheries Science University	102	39	University of Kerala	70
20.	Lakshmibai National University of Physical Education	102	40	University of Pune	290

http://shodhganga.inflibnet.ac.in/

Conclusion

Shodhganga is really a boon for the researchers. Few years back researchers just visit other states to collect data. With the initiative of the UGC, Information Library Network came into existence.It helped the universities and colleges to modernize their libraries. With this effort of INFLIBNET lot of development took place. Access to e-resources is given to students and faculty of colleges under N-LIST programme and under ShodhGangotri programme research community is requested to submit soft copy of approved synopsis submitted by the researcher to the University for Ph.D. registration.Under Shodhganga programme the users can access the thesis contributed by the university while sitting anywhere in the world. There are 307 state universities and 44 central universities in India. But it is very strange that only 40 universities are contributing their thesis in Shodhganga. In the university system it is mandatory now days that at the time of submission of thesis, researcher is asked to submit the soft copy along with hard copy. The softcopy is sent to INFLIBNET to upload the same on the site of shodhganga. Universities are making efforts to scan the already submitted thesis which are not available in digital format. The INFLIBNET is also providing financial assistance for the same. UGC also impresses all the universities to be the part of the shodhganga. Failing which strict action may be initiated against the non-contributing universities. This is also a moral duty of the universities to contribute their thesis to shodhganga. University authorities and librarians should come forward to be the part of this intellectual work. The government of India is making its best efforts through UGC to provide an environment for development of research in the country.

References

1 Kothari CR. Research methodology. New Delhi: Wishwa; 1985, 1-22.

2 Misra, RP. Research methodology. New Delhi: Concept; 1989, 1-17.

3 http://www.ugc.ac.in/page/Genesis.aspx

4 http://www.inflibnet.ac.in/

5 http://shodhganga.inflibnet.ac.in/

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Original Article

State University Libraries of Uttar Pradesh: Present Scenario

Subhash Chandra

Abstract

This paper highlights the existence of state university libraries from several dimensions. It deals with the existence of uttar Pradesh, location, population, universities and their development and finally the present status of university libraries in different terms.

Keywords: University Libraries; Uttar Pradesh.

The State of Uttar Pradesh

Uttar Pradesh- U.P. in short, is the most populous state in India. In area, it is the fourth largest state of the country. It covers about nine percent of the total area of India. In the later Vedic age it was called Brahmarshi desa or Madhya desa. 'Varaha Purana' is associated with Mathura. Uttar Pradesh is said to have been the inspiration of Ramayana and the Mahabharata for Ramayana alludes to the royal family of Kosala and the Mahabharata refers to the royal family at Hastinapur, both in Uttar Pradesh. This is the land of the Taj Mahal, Ganga, Kumbh Mela, Vrindavan and Banaras, the Oudh of Wajid Shahs and Imambaras of Lucknow.[1]

In the sixth century B.C., Uttar Pradesh was associated with two new religions, Jainism and Buddhism. Mahavira, the founder of Jainism, is said to have breathed his last at Doora in Uttar Pradesh. It was at Sarnath, again in Uttar Pradesh, that the great Buddha preached his first Sermon and laid the foundation of his order. In the post-Buddhist period several centers in Uttar Pradesh, like Ayodhya, Prayag, Banaras and Mathura became reputed centers of learning.

In the medieval period Uttar Pradesh passed under Muslim rule and led the way to a new synthesis of Hindu and Islamic cultures. Ramananda and his Muslim disciple Kabir, Tulsidas and Birbal, and many other intellectuals contributed to the growth of the vernacular languages, Hindi and Urdu. Urdu remains the perfect synthesis of Hindu and Muslim cultures.

Location

A mix of Bengal province, Agra province, and others, this State was called United Province in 1935. After independence in January 1950, it was called Uttar Pradesh (Uttar=north, Pradesh=state).[2] Its boundaries are touches by the adjoining States Uttaranchal, Himachal, Haryana, Delhi, Madhya Pradesh, Rajasthan, Bihar, Jharkhand, Chhatisgarh and Nepal. It has a territory of 2,40,928 square Kilometers which is about nine percent of the country's total area.

Population

U.P. is the most populous state in the country accounting for 16.4 percent of the country's population is also the fourth largest state in geographical area. The total population of the state was 8.8 crores in 1971. It increased to 11.1 crores in 1981 and then reported to be 13.9 crores in 1991. The increase, in population in these two decades was almost

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identical 25 percent. As against this, the national population shows a declining trend from 25 percent in 1971-81 to 23.8 percent 1981-91. Since 1971-81 the decadal variation of U.P. population in percentage forms has remained higher than that of the national.

As per the data (provisional) of 2011 census, the total population of U.P. is 19, 95, 81, 477 in which males are 10, 45, 96, 415 and females are 94, 985, 062. There are 908 females per 1,000 males in the state and the density of the population is 828 per square kilometers.[3]

An analysis of the population of the state shows that it has the largest population belonging to the Scheduled Castes in India both in obsolete figures and in percentage. The impact of this high number on the economy of the state, according to J. P. Chaturvedi "is reflected in the economic and social complexion of the state and…..in poor returns, poor health, low living conditions and low rate of literacy".

State Universities of Uttar Pradesh

A university is a community where scholars and teachers are head, students are the body and the library is the heart. The primary aim of university education is to cater to the needs of those who are interested in higher education and those who want to spread their knowledge in the interest of nation and society. A university mainly stands for higher learning and research.

In Uttar Pradesh, the break- up of conventional state universities is as under:

1. Bundelkhand University, Jhansi.
2. Chhatrapati Sahu Ji Maharaj University, Kanpur.
3. Choudhary Charan Singh University, Meerut.
4. Deen Dayal Upadhyay University, Gorakhpur.
5. Dr. Ram Manohar Lohia Awadh University, Faizabad.
6. Dr. B. R. Ambedkar University, Agra.
7. Lucknow University, Lucknow.
8. Mahatma Jyotiba Phule Rohilkhand University, Bareilly.
9. Mahatma Gandhi Kashi Vidyapeeth, Varanasi.
10. Sampurnanand Sanskrit Vishwavidyalaya, Varanasi.
11. Veer Bahadur Singh Purvanchal University, Jaunpur.

Development of University Libraries in U. P.

Among major obstacles to university library development in some countries in general and in India in particular, the following seem to stand out prominently: lack of clearly defined university and library objectives; of co-operation and understanding from university authorities and faculties; of trained library personnel; of library resources in the university and in the country at large; severe import and currency restrictions; inadequate financial support; inadequate physical facilities; failure to appoint a university librarian, to give him authority commensurate with his important responsibilities, and to recognize the educational and professionals of librarians; and unduly complex purchasing and other administrative regulations.[4]

Development of university libraries in Uttar Pradesh can be divided into two phases, one pre independence period and two post independence period. During pre independence period five universities namely University of Allahabad, Allahabad (1887), Banaras Hindu University, Varanasi (1916), Aligarh Muslim University, Aligarh (1920), University of Lucknow, Lucknow (1921) and Agra University, Agra (1927) were established.

Allahabad is the oldest university of the state. The University of Allahabad founded on September 23, 1887. Its jurisdiction extends over an area within a radius of sixteen Kms. from the Senate Hall of the university. There are three university colleges which supplement instructions given by the university, eleven associated colleges providing degree courses and one constituent college maintained by Government which falls within the territorial

jurisdiction of the university.

The Banaras Hindu University came into existence in the year 1916. It has power to maintain colleges and institutions within a radius of fifteen miles from the main temple of the university. The university may also found and maintain (within or beyond the aforesaid limits) special centers and laboratories for research in humanities, science and technology, education, medicine and other subjects and spheres of learning and knowledge. The university has two campuses (at Varanasi and Barkachha), three institutes, sixteen faculties, 140 departments and four advanced centers and four interdisciplinary schools under its jurisdiction.[5]

In 1920, Aligarh Muslim University was originated as a result of efforts made by Sir Syed Ahmed Khan. The jurisdiction of the university extends over a radius of twenty five Kms. from the university mosque. The university has three campuses (at Aligarh, Malappuram and Murshidabad), twelve faculties, ninety five departments, five institutes and thirteen centers under its jurisdiction.[6]

Soon after the establishment of Aligarh Muslim University, The University of Lucknow came into existence in the year 1921 as a unitary, teaching and residential university. The then King George's Medical College, The Canning College and The Isabella Thoburn College formed the nucleus for establishment of the university. At that time its territorial jurisdiction extends over a radius of sixteen Kms. from the convocation hall of the university. Now there are seven departments and one hundred seven affiliated colleges.[7]

The foundation of Agra University was laid in the year 1927 at Agra to affiliate the colleges of seven districts of Agra Division. Three teaching institutions, namely K.M. Institute of Hindi Studies and Linguistics, Institute of Social Sciences and Institute of Home Science were established as university constituent centers. Now there are ten faculties, fifteen institutes and two hundred (approx.) affiliated colleges.[8]

Out of these five universities, University of Allahabad, Banaras Hindu University and Aligarh Muslim University are the central universities under the central government.

During post independence period, the Thomson College of Civil Engineering which was established in 1847 was raised to the status of a university in 1949 by Act No. IX of U. P. Govt. It is now known as University of Roorkee.[9] In the year 1957, University of Gorakhpur was established at Gorakhpur. At present there are 219 affiliated colleges in seven districts namely Gorakhpur, Basti, Sant Kabir Nagar, Siddharth Nagar, Kushi Nagar, Maharajganj and Deoria.[10] In 1958, Varanaseya Sanskrit Vishwavidyalaya was established at Varanasi by raising the erstwhile Government Sanskrit College, Banaras, into a full fledged university. The Vishwavidyalaya was renamed as Sampurnanad Sanskrit Vishwavidyalaya by the U.P. State University Act in the year 1974.[11] In the year 1960, Govind Ballabh Pant University of Agriculture & Technology was established by Act No. XI-V, 1958 of U.P. Govt. The main campus lies at Pant Nagar (Udham Singh Nagar district) and others at Ranichauri (Tehri district), Majhera (Nainital district) and Lohaghat-Sui (Champavat district).[12] In the year 1966, two more universities (one at Kanpur and other at Meerut) were established. Later on the Kanpur University was renamed as Chhatrapati Sahu Ji Maharaj University, Kanpur. At present there are 598 affiliated colleges in fifteen districts.[13] Meerut University was also renamed as Choudhary Charan Singh University, Meerut. There are 425 affiliated colleges in the districts of western Uttar Pradesh.[14] In 1973 Garhwal University was established at Srinagar (Pauri Garhwal district) by the U.P. govt. Later on it was renamed as Hemvati Nandan Bahuguna Garhwal University and declared Central University in the year 2009. There are 180 colleges/ institutes affiliated to this university. [15] Kumaun University was established at Nainital in the year 1973. At present there are 89 colleges/ institutes affiliated to this university in Kumaun region.[16] In 1975,

Avadh University was established at Faizabad and renamed as Dr. Ram Manohar Lohia Avadh University. The affiliated colleges to this university are spread over at Faizabad, Sultanpur, Barabanki, Ambedkar Nagar, Pratapgarh, Gonda, Bahraiach, Balrampur and Lucknow.[17] Rohilkhand University was also established in the year 1975 at Bareilly and renamed as Mahatma Jyotiba Phule Rohilkhand University. The no. of affiliated colleges is 189.[18] Bundelkhand University was also established at Jhansi in the year 1975 under the provision of State Universities Act. In 1975, two more agricultural universities, one at Kanpur known as Chandra Shekhar Azad University of Agriculture & Technology and other at Faizabad known as Acharya Narendra Dev University of Agriculture & Technology were established by the U.P. govt. for undertaking teaching, research and extension programmes in agriculture and rural industry.

Present Scenario

There are at present eleven state universities in U. P. The state is the largest state in the North Region with the largest number of universities. It is followed by Bihar, Rajasthan and Delhi. About 30 per cent of the total universities in the country have been established in this region, with about half of them coming up during the last twenty five years.

Financial Support

UGC provides Development (Plan Grants) and Maintenance (Non-Plan Grants) to university and college level institutions. As of now, the UGC provides development as well as maintenance grants to 120 State Universities of the country. The X Plan Allocation to the 11 state universities of U. P. may be seen in the table 1.

Table 1: Financial Support by UGC (*Source*:

S. No.	Name of University	Total Grant released in X Plan (Rupees. In Lakh)
1	BU, Jhansi	135.00
2	CSJMU, Kanpur	120.90
3	CCSU, Meerut	214.80
4	DDU, Gorakhpur	70.80
5	Dr. RMLAU, Faizabad	56.40
6	Dr. BRAU, Agra	62.40
7	LU, Lucknow	258.60
8	MJPRU, Bareilly	168.30
9	MGKV, Varanasi	51.00
10	SSV, Varanasi	80.00
11	VBSPU, Jaunpur	135.00

Table 2: Document Collection (*Source*: Universities Handbook)

Collections	Number of Universities
1 Lakh - 2 Lakh	5
2 Lakh – 3 Lakh	5
4 Lakh – 5 Lakh	1

Table 3: Classification/Cataloguing Systems Used in Libraries (*Source*: Questionnaire)

S. No.	University	Classification Scheme followed	Cataloguing Systems followed
1.	BU, Jhansi	DDC	AACR-2
2.	CSJMU, Kanpur	DDC	AACR-2
3.	CCSU, Meerut	DDC	AACR-2
4.	DDU, Gorakhpur	DDC	AACR-2
5.	Dr. RMLAU, Faizabad	DDC	AACR-2
6.	Dr. BRAU, Agra	DDC	CCC
7.	LU, Lucknow	DDC	AACR-2
8	MJPRU, Bareilly	DDC	AACR-2
9.	MGKV, Varanasi	CC	CCC
10.	SSV, Varanasi	CC	CCC
11.	VBSPU, Jaunpur	DDC	AACR-2

Table 4: Position of Vacant/Filled Posts of the Libraries (*Source* Questionnaire)

Sr. No.	University	Assistant Librarian	Deputy Librarian	Librarian
1.	BU, Jhansi	-	□	-
2.	CSJMU, Kanpur	□	-	-
3.	CCSU, Meerut	-	□	-
4.	DDU, Gorakhpur	-	-	□
5	Dr. RMLAU, Faizabad	-	-	□
6.	Dr. BRAU, Agra	□	□	-
7.	LU, Lucknow	□	□	-
8.	MJPRU, Bareilly	□	-	-
9.	MGKV, Varanasi	□	□	□
10.	SSV, Varanasi	□	-	□
11.	VBSPU, Jaunpur	-	-	-

From table 1 we see that MGKV, Varanasi got lowest grant and LU, Lucknow got highest grant from the UGC in X plan allocation.

Document Collection

Document collection is considered as the foundation of any library. A university library cannot respond to the rising needs of its numerically increasing users unless it has the materials required by them. For supporting education and research programmes of the university, its library must develop a well-balanced and rich document collection.

From the table 2 it is found that the collection of ten universities is up to 3 Lakh and only one university's collection is up to 5 Lakh.

Classification/Cataloguing of Documents

In about all the libraries attached to the universities, the document collection is classified by one system of classification or the other. However, it is experienced that in many of them there remains considerable backlog of unclassified books. The various cataloguing systems also followed in the university libraries.

It is clear from the table 3 that Dewey Decimal Classification for the classification purpose and Anglo American Cataloguing Rules-2 for the cataloguing purpose are preferred by the Indian library professionals as they consider them simpler than the Indian systems.

Library Manpower

The library manpower plays the key role in making the library resources available to the users. There has been wide discussion on the need to accord them the academic status. Long back, the Calcutta University Commission (1917-19) recommended for the first time that the university should have the services of a Librarian who "should have salary and status of a Professor…" Later, all the Commissions and Committees put forward similar recommendations so that "the status and salary scale of library staff should be the same as that of teaching and research staff." At present there is parity in the salary scales of the University Librarian with that of the Professor. The University Librarians now possess high academic and professional qualifications that enable them to beat par with the teaching faculty.

From the table 4 we see the current figure of library cadre in the university libraries.

From the table 4 it is found that mostly universities are not interested to fill up the posts of assistant librarian/deputy librarian/ librarian. These posts are vacant since a long time. Nearly 40 per cent posts are filled. It gives a bad impression for the library.

Summing Up

In the university libraries of Uttar Pradesh there has been a practice of Honorary Librarianship. Except three or four university libraries, there is no full fledged university librarian. University libraries are headed by one of the university professors in the capacity of honorary librarian. In Uttar Pradesh, people are not library minded and after the establishment of the university, much attention is not given to its library and to the appointment of the university librarian, deputy librarian and assistant librarian. The professional organizations must take initiative in this direction also.

References

1. Taher, Mohammad. Libraries in India's National Development Perspective: A Saga of Fifty Years Since Independence. N Delhi: Concept Publishing Co.; 2001, 460.
2. *Ibid*. 460.
3. www.upgov.nic.in/upstateglance.aspx retrieved on 20.08.2012.
4. Gelfand, MA. University Libraries for Developing Countries. Delhi: Universal Book; 1974, 14.
5. www.bhu.ac.in retrieved on 22.08.2012.
6. www.amu.ac.in retrieved on 22.08.2012.
7. www.lkouniv.ac.in retrieved on 22.08.2012.
8. www.dbrau.ac.in retrieved on 22.08.2012.
9. www.rurkiu.tripod.com retrieved on 22.08.2012.
10. www.ddugu.edu.in retrieved on 22.08.2012.
11. www.ssvv.up.nic.in retrieved on 22.08.2012.
12. www.gbpuat.ac.in retrieved on 22.08.2012.
13. www.kanpuruniversity.org retrieved on 22.08.2012.
14. www.ccsuniversity.ac.in retrieved on 22.08.2012.
15. www.hnbgau.ac.in retrieved on 22.08.2012.
16. www.kuntl.in retrieved on 22.08.2012.
17. www.rmlau.ac.in retrieved on 22.08.2012.
18. www.mjpru.ac.in retrieved on 22.08.2012.

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Original Article

Difficulties in Use & Implication of Open Source Software in Academic Libraries of Gulbarga: A Study

Shoukat Ali

Abstract

An attempt has been made to determine the present status Library Automation and use of ICT in Libraries. It was observed that Library Automation is still inadequate among the college Libraries of Gulbarga and need lot of awareness and worthiness of using ICT in Libraries for betterment of user oriented services. This paper presents the findings of a survey about the status and use of Open Source Software by the LIS professionals of different colleges. The subjects chosen for this study were **"Difficulties in use & Implication of Open Source Software in Academic Libraries of Gulbarga: A Study"** For evaluating the study questions and data collection, the questionnaire was distributed randomly. The result of this study are presented and discussed in this paper.

Keywords: Library automation; Open source software; Academic libraries.

Introduction

Information as a Resource

Information technology is an area of fundamental importance to the economic development of a nation as it plays potential part in the development of the nation's industrial and commercial base. The importance of information technology has been recognized by the governments and industries of most of the developed countries. Like materials and energy, information is a basic resource and the critical questions about any resource also apply to information: who has it, who wants it, how can you get it, and at what terms? These questions are timeless; new information technologies are changing only the answers.

The main objective of a library is to preserve information to facilitate future access and dissemination of knowledge.[1] Digital information is easy to create copy and disseminate but very hard to preserve. Digital information exists in a wide variety of proprietary formats in the absence of any international standard. Long lives of these resources are at risk due to constant threat from hackers and virus infection. This fluid and unsettled environment presents challenges for a library, especially in regard to the library's collection management decisions and access strategies.[2] Preservation of digital information through migration needs periodic transfer of digital

materials from one hardware/software configuration to another or from one generation of computer technology to a subsequent generation. But it requires huge fund and trained manpower.

Open Source Software

Open source defines method of software development, that harnesses the power of distributed peer review and transparency of progress. This technique helps to provide better quality software's having higher reliability, flexibility with lower cost, and an end to the traditional vendor lock-in. The source code and

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rights that where normally reserved for copyright holders are now being provided under a free software license that permits developers / users to study, change, improve and at times also to distribute the software.[3]

In many of the libraries, the library scientists have collaborated with software engineers for developing customized software. Indian libraries are at present using indigenously developed software or standard packages distributed by UNESCO [4] and IRDC. Several commercial library software packages are available though they are somewhat expensive. The commercial packages developed in India which are used in a number of libraries are: LIBSYS, EASYLIB, SANJAY, MAITRAYEE, etc.[3] The latter two developed over CDS/ISIS Package freely distributed by UNESCO etc. The software packages which are more popular with libraries are: LIBSYS, MINISIS, CDS/ISIS, IV + V Package, and TECHLIB. Freely available softwares are E Grnathalya, SOUL, D Space, Greenstone etc.[4]

Review of Literature

Reviewing related literature helps researches to limit their question and to clarify and define the concepts of the study a research question may be too broad to carry out or too vague to be put into concrete operation. A careful review of their literature can help researches to revise their initial question so that it can be investigated. It also helps in clarifying the concepts into operational definitions.

Randomly we have selected the colleges from different streams of Gulbarga city, affiliated to Gulbarga University, Gulbarga and Karnataka Women's University, Bijapur and others the study starts with distribution of Questionnaire in to the Librarians by interacting them in their college libraries the results shows that very few college Librarians are aware about the Open Source Software and its uses it is very much essential that the Librarians and college Management should take a proper step in executing the ICT technologies for improvement of their Libraries

and services.

Objectives of the Study

1. To understand the awareness of Open Source Software.
2. To find out the purpose and utilization of the Open Source Software.
3. To find out status of Library and its automation
4. To find out the status of using ICT in Libraries.
5. To study the problems in adopting the Open Source Software.
6. To find out the qualified LIS professionals in Libraries.
7. To give proper suggestions for optimizing the Open Source Software.

Scope of the Study

The locale of the study was the college Libraries these are Deccan B.Ed College, Jai Hind B Ed College, Deccan B.Ed College for Women, Aryan B Ed College, Nutana Vidyalaya Degree College, National Degree College, North Karnataka Degree College of Arts & Commerce, YKD Polytechnic, Deccan PU College of Arts & Science Etc of Gulbarga City.

Methodology

The present study is based on the survey method. The questionnaire and observation methods have been used to collect data for the study. In order to gather data, a structured questionnaire was designed and distributed

Table 1: Library and the Facility Provided for Library Automation

SL NO	COLLEGE	LIBRARY	COMPUTER	INTERNET	Budget for Library Automation	Awareness of OSS	LIBRARY S/W
1	Deccan B Ed College	Yes	Yes	Yes	No	Yes	Local Made
2	Deccan B Ed College for Women	Yes	Yes	Yes	No	Yes	Local made
3	Y K D Polytechnic	Yes	Yes	Yes	No	No	Nil
4	National Degree College	Yes	Yes	Yes	Yes	Yes	Local Made
5	Nutana Vidyalaya Degree College	Yes	Yes	Yes	Yes	Yes	EasyLIb
6	Jai Hind B Ed College	Yes	Yes	Yes	No	No	Nil
7	Deccan P U College	Yes	Yes	Nil	No	No	Nil
8	North Karnataka Degree College	Yes	Yes	Yes	No	No	Nil

among librarians to collect all exhaustive information regarding ICT infrastructure & its use in library operations and services. Responses obtained from the Librarians of different Libraries were analyzed in the light of the criteria (a) Availability of ICT hardware; (b) Availability of software; (c) Development of library databases and electronic resources and (d) having the state of ICT activities as per the criteria and finally they were selected for the study.[5] All the selected libraries have been surveyed in detail to study the development of ICT infrastructure, and its utilization OSS in library activities

Results of the study

Table 1 contains the Library and the Facility Provided for Library Automation

The table 1 shows that majority of the College Libraries do not have separate budget for Library Automation and the some of them are using the Local made Library software for their Circulation purpose. Many of the libraries having the computer and internet facilities but they are unable to install and use the Open Source Software.

Based on the study the Difficulties in Use & Implication of Open Source Software in libraries in may be divided into Four Categories, namely:

(i) Financial, (ii) Technical (iii) Cultural and (iv) Others.[6]

The (**i**) *Financial* problem is mainly due to

(a) Rising software prices

(b) Frequent software/hardware obsolescence

(c) Impart training to existing library personnel to handle digital resources

(d) Lack of support form the college management

(ii) *Technical* problem is related to the lack of expertise on

(a) Collecting and maintaining digital resources

(b) Developing the automated library services

(c) Finding scholarly information from "hidden Web"

(d) Librarians are not having the computer knowledge.

(e) Lack of awareness

(f) Inappropriate operating systems

(g) Lack of internet speed and file formats.

(iii) Cultural may be considered as hindrance

(a) No full time computer professional in the

libraries

(b) Lack of coordination between computer professionals within and outside of the Organization.

(c) Lack of interest to keep track with the ever changing information seeking behavior of Users.

(d) Lack of interest to add values to their services

(e) Lack of interest to interact with users.

(f) Lack of interest to utilize physical space of the library.

(iv) *Other Deficiencies*

(a) Majority of the college libraries do not have proper facilities to meet the needs of their users.

(b) Their collections are not up-to-date, budgets are their very inadequate and limited, and a large number of them are single libraries.

(c) In many colleges, there is neither a library hall nor a sufficient big room, not to think of a separate building for the library. Any unused room, quite often somewhere out of sight, would be considered adequate to house a few shelves of books.

(d) And in most college libraries there is complete darkness even during the day time, as the windows are closed out of a fear that the books may be stolen.[7]

Suggestions

- More Facility should be provided to Access internet.
- Provision for undergone the ICT training to the Librarian.
- Regular training & awareness program should be conduct to the Library Staff.
- More Emphasis should be given to Library Automation.
- The Library staff should be qualified and aware of the ICT
- Provide strong ICT infrastructure to the Library by the concerned authority.
- Adoption Hardware & broad band Internet to the Library.
- Awareness about the worthiness of Open Source Software for Libraries.
- There should be separate Budget for Library Automation.

Conclusion

The College libraries have a significant role top lay in higher education. Implementing ICT into Libraries should make a huge impact on the way the users approaches and the way they use the Library services by providing the appropriate training to the Library staff the Library and the users will be beneficial because ICT proved to be easier, and cost effective. Educational authorities should take steps to improve their Library staff, and should pay more attention for Library resources. Librarians should keep updated their knowledge by participating in Conferences, Workshops and get involved in forums, Groups, Consortia, online portals and other new technologies.

References

1. Technology-Enhanced Library Services and the Librarian's Identity Crisis in Academic and Research Libraries of India .V. K. J. Jeevan Indian Institute of Technology, Kharagpur, West Bengal, India Libri, 2007, vol. 57, pp. 100–109.
2. Tiwari, Braj Kishor and Sahoo KC. Infrastructure and Use of ICT in University Libraries of Rajasthan (India). *Library Philosophy and Practice (e-journal)*. 2013; Paper 883.

3. Neelakandan B, Duraisekar S, Balasubramani R, Srinivasa, Ragavan S. Implementation of Automated Library Management System in the School of Chemistry. Bharathidasan University using Koha Open Source Software. *International Journal of Applied Engineering Research, Dindigul*. 2010; 1(1).
4. Infrastructure and Use of ICT in University Libraries of Rajasthan (India). Braj Kishor Tiwari, Shri GS Institute of Technology and Science, Indore (MP) India, KC Sahoo, Dr. HS Gour, Central University, Sagar (MP), India.
5. Arambam Hileima Devi , TH Purnima Devi. Application of information technology in special Libraries of Manipur: a case study. *International Journal of Computer Applications (0975 – 8887)*. 2012; 59(16).
6. Availability of Electronic Resources at NIT Libraries in India : A Study. Y Srinivasa Rao, Assistant Librarian, National Institute of Technology Rourkela, Orissa, India, BK Choudhury, Professor, Department of LISc, Sambalpur University Sambalpur, Orissa, India. ICAL 2009 – POSTER PAPERS.
7. P Venkata Ramana & V Chandrasekhar Rao. Use of Information Technology in Central University Libraries of India. *DESIDOC Bulletin of Information Technology*.2003; 23(2): 25-42.

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Original Article

Use of Electronic and Print Resources in Guru Jambheshwar University of Science & Technology, Hisar

S.S. Joshi

Abstract

Technological advancement has changed the scenario of university libraries.Initially nobody can think of electronic sought of material. Print material was only in use .Gradually with the technological innovation people become aware of electronic resources. Still lot of people doesn't have the access to these resources due to financial restraints. University Grant Commission is working in this direction to provide access to e- resources. Through INFLIBNET free access is being provided to university and colleges. The paper is an effort to know the use of electronic and print material in Guru Jambheshwar University of Science & Technology, Hisar. Attempt has also been made to know the relevancy of these resources from user's point of view.

Keywords: Electronic resources; Print material.

Introduction

Library is considered as the place where guidance is imparted to the user for the use of electronic and print material. Movement of the user from the printed to digital environment has resultedthe change in the mode of information retrieval. With technological advancement the user now a days are not dependent on the traditional information seeking modes. They have access of information directly on their table while sitting anywhere in the world.[1] To provide the current information to the clientele, it is must that information must reach to the user as early as possible. But it generally does not happen in the case of subscription of print journals from the foreign countries. The ordering, payment and formalities of custom duties takes lot of time, causing delay in delivery of the printed journal. On the other hand retrieval of information for research or teaching via electronic mode is a better choice.[2]

E-resources include the material in digital format. These consist of, e-books, e-journal and databases etc. These resources are available on Internet. With the emergence of e-resources virtual users are coming into existence. Research community has now access to global informational resources.[3]

It was Johannes Gutenberg who changed the life of the people with the invention of printing press. This is the human tendency to find more and more ways to spread information. With the development in computers, networks and internet facility,the whole scenario has been changed. People started thinking digital information instead of printed information. Librarians too started acquiring electronic material in addition to the print material. Initially the quantity of digital material was very limited. With the technological revolution the digital content became million and billion in no time. Today all the renowned publishers are developing their own digital contents. Some contents in individual and some in packages are available in the market. As a whole it has been seen that digital content is costlier than print content. Efforts of the government and the various

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consortiums are making the availability of digital contents at cheaper rates for the libraries.

Purpose

The increased demand of reading material has enhanced the quality of library services. But due to scarce resources it has become very difficult for libraries to survive. Inflation has also affected the cost of the reading material. Therefore judicious use of the resources is the need of the hour. The study will provide the clear picture of the use of electronic and print resources in the university library of Guru Jambheshwar University of Science & Technology, Hisar. Out of electronic content or print content,which is highly in use.What is the requirement of the student or faculty member?Whether the library is capable enough to satisfy the informational thrust of the students and the faculty members. This would also suggest what necessary reforms should be introduced in the library to promote the use of electronic resources. Following are the main purposes to conduct the study:

1. To provide data for evaluation.
2. To identify the factors influencing the use of e-resources.
3. To identify the Inclination of student and faculty towards e/print resources.
4. To identify out of electronic resources and print resources, which material is more useful for the student and faculty?
5. Which resources is superior i.e. electronic or print.
6. Which resource can be better utilized by using scarce resources most economically?
7. How financial resources can be better utilized.
8. Out of student and teachers who is using the electronic resources up to maximum extent.

It is well known fact that research originates from the unsolved problems. In this study following problems have been taken into consideration.Resources here mean electronic resources and print resources.

- Problem of funds.
- Lack of user awareness.
- Lack of use of electronic resources.
- Problem of management of resources.
- Problem of getting optimum benefits by the use of scarce financial resources most effectively.
- Problem of selection.
- Problem of satisfying the informational thrust of the users.[4]

Methodology

It is well known fact that initial stage of any statistical investigation is collection of data. The data can be of primary and secondary. The study is mainly concerned with the primary data. The researcher was himself involved in the collection of data. The information has been obtained through the following methods:

- *Questionnaire Method:* The help of questionnaire has been taken in the study. Two questionnaires were prepared i.e. one for faculty and the second for students. The questionnaire was carefully designed to avoid any ambiguity.
- *Interview Method:* Help of the interview method was also taken in this study to know about the point of view of faculty and students toward electronic resources and print resources.
- *Observation:* The study was also conducted by personal involvement of the researcher in the users and he also observed the situation from the distance. The researcher also tried to know whether the users are satisfied with the support /services provided by the library or not.This method has its own importance, because information is obtained directly rather than through mediators. For accuracy, scrutiny of data

has also been made. Inaccuracy, if any has been carefully rectified by the researcher.[4]

The Data: General Description

The data in this study has been collected from the faculty members and the students .For this 150 questionnaires were distributed to each category i.e. Faculty members and research scholars, students of P.G.courses and students of U.G. courses. The present strength of faculty members and the students in Guru Jambheshwar University of science and technology is as under:

Faculty Members	Students
194	4525

Presently university library is subscribing more than 5000 journals of 17 publishers through INFONET programme of UGC. University library is also subscribing Emerald Management Xtra 175, J Gate Plus, Prowess, Economic Outlook, States of India databases for the use of its users. University has more than 90000 collections of printed books. It is also subscribing 169 Indian journals in print form. Library has established two computer labs in the library for its users. Internet connectivity has been provided in both the labs so that the users may be able to access the electronic resources.

Use of Electronic Resources in Library

The response received from the faculty members and research scholars and students with respect to the use of electronic resources have been depicted in % in table 1:

The table 1 shows 59% of faculty members and research shcolars and 33% students are satisfied with the electronic resources available in the university. It has been observed that use of electronic resources by the students is less as compared to the faculty members and researchers. It has also been observed that level of dissatisfaction is more in post graduate students as compared to faculty members and research scholars. 43% of students are found dissatisfied with the use of electronic resources in comparison to 11% of faculty members and research scholars. The response of U.G. students are clearly seen from the above stated table. The students of U.G. courses are not interested in the use of electronic resources. They have shown negligible interest in electronic resources when they were asked regarding the use of electronic resources.

It has also been observed that only those students use electronic resources, which are enrolled in post graduate degree courses. The strength of the students of under graduate courses which are using electronic resources is found negligible (Table 2).

The table 2 clearly depicts that most of the teachers and research scholars of Guru Jambheshwar University on Science & Technology are regularly using the electronic resources. The 45% students of post graduate courses as compared to 2% students of under graduate courses are using the electronic resources regularly. It has also been observed that these resources are used only by those students who are indulged in research work. 89% students of under graduate courses as compared to 27% students of post graduate courses have never used the electronic resources.

Table 1:Use of Electronic Resources

Type of users	Satisfied	Moderately satisfied	Not satisfied	No comment
Faculty members and Research Scholars	59	23	11	7
Post Graduate students	33	12	43	12
Under Graduate students	3	4	4	89

Table 2:The Strength of the Students of Under Graduate Courses which are Using Electronic Resources

Type of users	Regular use of E-Resources	Use of E- Resources Once in a week	Use of E- Resources Once in month	No use of E-Resources
Faculty members and Research Scholars	77	12	11	Nil
Students Of PG courses	45	10	18	27
Students Of UG courses	2	3	6	89

During the study it has been observed that electronic journals in Guru Jambheshwar University of Science& Technology are mostly used by the faculty members, research scholars and students of post graduate courses. The following factors are found to be influencing the use of electronic resources:

- Academic Utility
- Accessibility
- Availability of infrastructure
- Marketing

Though university has the scarcity of funds, still financial resources are used in appropriate way. Committee has already been constituted to look after the purchase of these resources.

Use of Print Resources in Library

The response found in the study from the faculty members, research scholars and students with respect to the use of print resources have been depicted in table 3.

It has been seen from the table 3 that 80% of the faculty members and research scholars, 65% of post graduate students and 56% of under graduate studentsare satisfied with the availability of print resources in the library.Only 5% of faculty members and research scholars are not satisfied as compared to 13%of post graduate students and 11% of under graduate students. It has also been observed that students of under graduate courses use only text books, which cannot be provided by the library to each and every students of concerned subject.This is why 11% of under graduate studentshave been found dissatisfied by the use of print resources of the library. 13% of post graduate students are dissatisfied because most of them find material of their interest from the electronic resources which is not always available in the printed books. Only 5% of faculty members and research scholars are dissatisfied because libraries can not purchase all the books published worldwide. Hence 100% satisfaction of faculty members and research scholars is not possible.

Regarding the usage of the print material in Guru Jambheshwar University of Science & Technology, the table 4 provides the clear picture. The table shows that most of the users in the university are using print material. 89% of faculty members, 72% of post graduate students and 99% of under graduate students are using the print material. It has been observed that under graduate students rarely use the electronic resources. They satisfy their informational thrust by the use of print material only. 5% of faculty members and research scholars, 26% post graduate students and only 1% under graduate students use the print resources once in a week. 6% of faculty

Table 3:Response of Faculty Members, Research Scholars and Students with Respect to the Use of Print Resources

Type of users	Satisfied	Moderately satisfied	Not satisfied	No comment
Faculty members and Research Scholars	80	10	5	5
Post Graduate students	65	22	13	Nil
Under Graduate students	56	33	11	Nil

Table 4:Faculty Members and Research Scholars are Inclined toward the Use of Electronic Resources.

Type of users	Regular use of Print Resources	Use of Print Resources Once in a week	Use of Print Resources Once in month	No use of Print Resources
Faculty members and Research Scholars	89	5	6	Nil
Students Of PG courses	72	26	2	Nil
Students Of UG courses	99	1	Nil	Nil

members and research scholars and 2% of post graduate students are using print material once in a month. The strength of the under graduate students in the category is nil. None of the user admitted that they are never using the print resources (Table 4).

From the table 4 it has been revealed that faculty members and research scholars are inclined toward the use of electronic resources. Post graduate students are using electronic and print resources, whereas under graduate students are using only print resources of the university. It cannot be ascertained as which resource is better. Both he resources have their own importance. At one time one resource can be better and the other time second resources can be better. Both the resources can be better utilized by using scarce resources most economically. The expenditure on these resources is being done in a planned way. Committee constituted to look after the purchase is taking all the necessary steps to safeguard the financial resources of the university.

Conclusion

It has been revealed in the study that electronic and print resources have their own qualities. In present scenario a user require electronic and print material both for research work. The university of GJUS & T is providing access to on line journals and databases. The maximum number of faculty members and research scholars are benefitted from these resources. In the case of students it has been observed that only students of post graduate courses are using electronic resources. Students of undergraduate courses are not using electronic resources due to the lack of awareness. They are just using print material in the library. In print material also they are concerned only with the text books. For the use of electronic resources the faculty members of GJUST need to divert the under graduate students towards these resources. Necessary steps also need to be taken by the library to aware the under graduate students regarding the usefulness of electronic resources. Whereas faculty members, research scholars and post graduate students who are involved in research activities are inclined toward the electronic resources.

Regarding print material it has been observed that university library has more than 90000 books. These books are used by the teachers, research scholars and students. Inspite of scarcity of fund library has managed its resources very effectively. It has also been observed that motivation on the part of the students is required for the use of electronic resources and print resources. Library is organising workshops and orientation programs for students and faculty members to increase the use of these resources. It has also been observed that attitude of the faculty also influence the use of e-resources.Faculty in GJUS&T must encourage the under graduate students to use electronic resources in addition to the text book. Benefits of the e-resources may be conveyed to these students. Finally it can be concluded that in present scenario in developing countries both the

resources are necessary in the libraries. These are not contrary, but complementary to each other.

References

1. Swain, Dillip K. Students' keenness on use of e-resources. 2010; 28(4): 580-591.
2. Premchand-Mohammad, Sharon. Bridging the gap between print and electronic resources at a multi-campus university library. 2011; 41(3): 315-333.
3. Gupta, Dinesh K. Use pattern of print and electronic journals at the Kurukshetra University, India. 2011; 45(2): 213-230.
4. Joshi, Shyam Sunder. Cost benefit analysis of reprographic and microfilming techniques in university libraries and information centres of Haryana, Punjab, U.P. and Delhi. Ph.D theses submitted to KurukshetraUniversity. 1995.

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Study

Use of College/Faculty Libraries by Readers,Vis-à-vis the Main Library: The Case of the University of Agriculture, Abeokuta, Ogun State, Nigeria

Isaac Oluwadare Busayo*, Frederick Olatunji Ajegbomogun**

Abstract

Faculty or College libraries complements the services of the main library and helps to bring library services closer to the users in their respective Faculties/Colleges. This study appraised the Colleges of Engineering and Veterinary Medicine Libraries which started in the University of Agriculture, Abeokuta recently to deduce feed-back from the users, which could serve as reference point and guide to the take-off of other Colleges libraries within the University. The two College libraries can sit twenty-five (25) readers each at a time hence,a structured questionnaire was designed to elicit the desired information. Hence, fifty (50) copies of the questionnaire was administered on all the users with the cooperation and assistance of the Librarian in charge in both cases. All the fifty (50) questionnaires were well completed by the users,returned and used for this study,which represents one hundred percent (100%) response rate. The results revealed that the establishment of the two College Libraries were embraced by the users and maximally used by them because the libraries were sited within easy reach and the materials are quite accessible to them. However, the study also revealed that the users were dissatisfied with the closing time of the library, the book loan and photocopying services and demanded that internet services be extended to the library too. Recommendations were made to further boost the use of the Colleges Libraries.

Keywords: Veterinary Medicine Libraries;Book loan; Photocopying services.

Introduction

University libraries are academic libraries and they are established primarily to support the teaching, learning and research activities of their parent universities. By extension,most university libraries also run Faculty (College) and Departmental Libraries, all with the aim of ensuring that the library services are brought closer to their respective users with minimum stress.

The University library otherwise referred to as the main library coupled with the existence of the Faculty (College) and the Departmental libraries help in no small measure to fulfill accreditation requirements as these libraries have as their major function the provision of information resources and its dissemination within the university academic set-up, thus, complementing one another's role.

While the collections of the main library of the university are in divergent form, taking into cognisance the various courses being run in the university, that of the Faculty (College) and Departmental libraries are consciously built up,bearing in mind the various Departments that made up such Faculty (College), the courses offered by each Department and organized for maximum utilization of the respective clientele they are meant to serve. Faculty (College) and Departmental libraries are normally man by Librarians with related subject background for optimum performance and such Librarians are responsible to the University Librarian for the day to day running of the Faculty (College) and Departmental libraries.

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Background to the Study

The university of Agriculture, Abeokuta (UNAAB) was established in January, 1988. It is one of the three universities of Agriculture in the country, the others being in Makurdi (Benue State) and Umudike (Abia State). The establishment of the universities of Agriculture was an entirely new concept for promoting Agricultural education and services for Agricultural development and attainment of self-sufficiency in food and fibre-UAAB undergraduate propectus 2005/2006.[1]

The university was originally one of the five universities established by the Federal Government in 1983 when it was known as Federal University of Technology, Abeokuta (FUTAB). It was merged with the University of Lagos in 1984 and had its name changed to College of Science and Technology, Abeokuta (COSTAB). It became an autonomous university once more in 1988 with the establishment of UNAAB.

The distinguished feature of Universities of Agriculture is their tripodal mandate of teaching,research and extension,focused on Agriculture and related disciplines.[2]

The University Library (Nimbe Adedipe Library)

The library was moved into in october 1995, but it became fully functional in December, 1997. The library was named Nimbe Adedipe Library after the first Vice-Chancellor of the university in appreciation of his contributions to the development of the permanent site, particularly the library building which was the first to be completed.

The library collection has been growing steadily over the years. The present collection of books and bound journals is over 41,506 volumes, while the library currently subscribes to about 150 foreign journals (electronic and print) as well as 35 local journal titles. The library has a seating capacity for 600 users at a time. It also has an area designed for use for twenty-four hours,with a seating capacity for 100 users. Users can stay there and read their own materials throughout the day without any disturbance.

Opening Hours

The main library is open to readers as follows:

- During Session

  Monday–Saturday, 8.00am-8.00pm
- During Vacation

  Monday-Saturday, 8.00am-6.00pm
- The 24 hours reading room is available for use throughout the day during session.

The College Libraries

The University of Agriculture Abeokuta (UNAAB) operates the Collegiate system which is same as the Faculty system run by some other Universities, with the respective Departments under each. As at date, UNAAB has eight (8) Colleges namely:

- College of Engineering (COLENG)
- College of Veterinary Medicine (COLVET)
- College of Natural Sciences (COLNAS)
- College of Environmental Resources Management (COLERM)
- College of Plant Science and Crop Production (COLPLANT)
- College of Animal Science and Livestock Production (COLANIM)
- College of Food Science and Human Ecology (COLFHEC)
- College of Agricultural Management and Rural Development(COLAMRUD).

The College libraries took-off in 2009 with two Colleges namely:

1. The College of Veterinary Medicine (COLVET) &
2. The College of Engineering (COLENG). The third College, that is ,the College of Natural Sciences (COLNAS) is almost ready for a take-off.

Justification for the Study

The main and the college libraries were established to provide for the information needs of both the staff and students.It is therefore necessary as a way of feed-back,to find out the extent to which library users have availed themselves of the use of the available resources/services and to determine the areas of strenghts and weaknesses in the services provided for the Library Management information and decision as appropriate.

The study therefore intends to achieve the following objectives:

- To ascertain the use of the library
- The need (import) for the library
- Determine the adequacy of the materials housed
- The efficiency of the services rendered
- The opening hours
- The conduciveness of the library to reading
- The location (siting) of the library
- The accessibility of the materials &
- Users suggestions for improvement.

Review of Literature

Previous studies on the use of academic libraries by scholars as herewith reviewed, revealed varying results. Adelani (1998) noted with surprise that majority i.e. 75 (51.4%) of the samples surveyed, claimed that they visit (use) the library occasionally despite the benefits they claimed to have derived from the orientation programme while only 11 (7.5%) use the library daily, 35 respondents (24%) use the library once a week, 21 respondents (14.4%) use the library twice a week and 4 respondents (2.7%) never used the library.[3]

Osinubi (1998) in her own survey noted that in Ogun State University library, an average of 148 users per day was recorded during the 1990/91 session while the lowest patronage of an average of 36 users per day was recorded in the 1992/93 session. She recommends library education and the need to promote awareness of the use of the library through talks/lectures to curb low patronage of the library.[4]

Amkpa (1999/2000) in a similar study on students' use of University of Maiduguru Libraries observed that students only made partial use of the libraries as only 94 (8.95%) respondents out of 1050 indecated that they used the libraries for more than 6hours daily. Amkpa recommends the need for librarians to create an awareness on the part of the students of the need to make good use of the libraries so as to ensure success in their academic pursuit.[5]

Sressing the import of use of the library to effective learning for students in the universities, Oyesiku (1999/2000) cited Onatola (1997) as saying that the library serves as the bridge between the knowledge and instructions received by students in the classroom and the possible learning outcome by a particular student.[6] It is based on this importance that the library in tertiary institutions of learning become the focus of academic activities. Thus, library services are perhaps the first important facility that are made available to students at the point of entry.

Likewise, Tsafe (2004) in a survey of Students' Utilization of Medical Library, Usman Danfodio University, Sokoto observed that the medical students used the library heavily.[7] The results showed that out of the 240 respondents, 154 (64%) used the library most frequently. Also, 85 (35.4%) of all the respondents used the library for over six hours a day, 82 (34.2%) used it for between 5-6 hours daily, while only 21 (8.8%) used it for less than three hours a day.

Alokun (2003) in a related study found out that 224 (90%) of the sampled respondents were working in government establishments and the private sector.[8] Only 26 (10%) were not working, hence, due to lack of time and awareness of the use and services provided by the library, there was low patronage of the library by the part-time polytechnic students.

Thus, Alokun recommends as way out, orientation programme, teaching of the use of the library, provision of reading lists and regular assignments for this category of students.

In another study, Afolabi (2008) noted with concern that some students do not make adequate use of some basic library materials like the card catalogue, journals, newspapers and computer-based resources. He equally observed that some students rarely visit the library, while some never borrowed books and some love to hide, mark or mutilate books even when students were specifically warned during orietation programme that such offences carry one penalty or the other and could lead to outright suspension from from the institution.[9]

Mbashir and Adeoti (2008) in their study observed that faculty staff members of Kogi State University adequately use the library and the reading resources of the library presently meet up with their informationneeds. They also noted that not all the academic staff registered with the university library, hence, most of them only use the library for reference as only those who are registered can enjoy the loan or lending of books.[10]

Singh (2009) in a study on use of the libraries of Colleges of Education in Punjab gathered that students visit (use) libraries frequently for academic purposes and that books on their respective subjects of education were used more often than the reference and general collection. The study also revealed that most of the users were not aware about use of computers and availability of internet facility in libraries. Singh therefore recommends that the collection development of the libraries should be focussed on strengthening the curricular base and related collection and that orientation should be provided to users in a planned way to make them familiar with resources and services of libraries.[11]

Methodology

A Structured questionnaire with twenty-six (25) questions was designed to find out the opinion of users about the resources and services of the Colleges of Veterinary Medicine (COLVET) and Engineering (COLENG) Libraries that took-off in 2009. Each of the College library can sit twenty-five (25) readers at a time. Thus, fifty (50) questionnaires were administered on the users of the two libraries with the aid of the respective Librarian over-seeing the libraries.

The questionnaire was drawn to ascertain the use of the library, the need (import) for the library, the relevance of the materials,the adequacy of the services rendered, opening hours, conduciveness of the library, the location (siting) of the library and the accessibility of the materials housed. The last question sought for the user's free comments/ suggestions for improvement in their own opinion.

Interestingly, all the fifty (50) questionnaires were duly completed, returned and used for this study with the following findings.

Data Analysis, Interpretation and Discussions

Table 1 above revealed that majority of the respondents from the two Colleges under survey, (COLVET & COLENG) attested to their use of the library more than the University main library with response rate of 22 or 88.0% and 21 or 84.0% respectively. This implies that users make use of the College libraries more than the University's main library.

Table 2 above revealed that the users from the two Libraries warmly embrace the establishment of the College Libraries. They equally see the Library as a necessity and a relief to their respective users.

Table 3 above revealed that majority of the users of COLVET library attested to the adequacy (14 or 56.0%) and relevance (24 or 96.0%) of COLVET library materials to their needs while majority of COLENG library users attested only to the currency and relevance

Table 1: Use of Library by Respondents

	COLVET			COLENG		
	Agree	Disagree	Undecided	Agree	Disagree	Undecided
Use of college library more than the main library	22 (88.0%)	2 (8.0%)	1 (4.0%)	21 (84.0%)	4 (16.0%)	-
Preference for use of college library	-	23 (92.0%)	2 (8.0%)	1 (4.0%)	21 (84.0%)	3 (12.0%)
Use of both college and main library	14 (56.0%)	4 (16.0%)	7 (28.0%)	11 (44.0%)	7 (28.0%)	7 (28.0%)

Table 2: Need for College Library

	COLVET			COLENG		
	Agree	Disagree	Undecided	Agree	Disagree	Undecided
Establishment of college library is a welcome development	25 (100.0%)	-	-	24 (96.0%)	1 (4.0%)	-
College library is unnecessary	-	24 (96.0)	1 (4.0%)	-	23 (92.0%)	2 (8.0%)
College library is of necessity and relief to users	24 (96.0%)	1 (4.0%)		25 (100.0%)	-	

Table 3: Adequacy and Relevance of Library Materials

	COLVET			COLENG		
	Agree	Disagree	Undecided	Agree	Disagree	Undecided
Adequacy of library of library materials	14 (56.0%)	6 (24.0%)	5 (20.0%)	4 (16.0%)	11 (44.0%)	10 (40.0%)
Currency and relevance of library materials	24 (96.0%)	-	1 (12.0%)	17(68.0 %)	-	8 (32.0%)
Library materials are grossly inadequate	20 (80.0%)	1 (4.0%)	4 (16.0%)	11 (44.0%)	9 (36.0%)	5 (20.0%)

Table 4: Library Services

	COLVET			COLENG		
	Agree	Disagree	Undecided	Agree	Disagree	Undecided
Satisfaction with loan services	6 (24.0%)	14 (56.0%)	5 (20.0%)	4 (16.0%)	11 (44.0%)	10 (40.0%)
Photocopying services is commendable	10 (40.0%)	12 (48.0%)	3 (12.0%)	8 (32.0%)	9 (36.0%)	8 (32.0%)
Staff attitude to users is encouraging	20 (80.0%)	1 (4.0%)	4 (16.0%)	15 (20.0%)	5 (20.0%)	5 (20.0%)

Table 5: Library Opening Hours

	COLVET			COLENG		
	Agree	Disagree	Undecided	Agree	Disagree	Undecided
College library opens till 8 pm, Monday to Friday	12 (48.0%)	13 (52.0%)	-	6 (24.0%)	18 (72.0%)	1 (4.0%)
College library opens at weekends	9 (36.0%)	15 (60.0%)	1 (4.0%)	4 (16.0%)	19 (76.0%)	2 (8.0%)
Suitability of opening hours	8 (32.0%)	16 (64.0%)	1 (4.0%)	11 (44.0%)	10 (40.0%)	4 (16.0%)

Table 6: Respondents Opinion on Conduciveness of Library Facility

	COLVET			COLENG		
	Agree	Disagree	Undecided	Agree	Disagree	Undecided
Reading tables and chairs	25 (100.0%)	-	-	21 (84.0%)	3 (12.0%)	1 (4.0%)
College library is well lit and conditional	9 (36.0%)	14 (56.0%)	2 (8.0%)	22 (88.0%)	2 (8.0%)	1 (4.0%)
The college library has its own generator for steady power supply	1 (4.0%)	23 (92.0%)	1 (4.0%)	3 (12.0%)	20 (80.0%)	2 (8.0%)

Table 7: Respondents Opinion on Location of the Library

	COLVET			COLENG		
	Agree	Disagree	Undecided	Agree	Disagree	Undecided
Sited within easy reach to users	22 (88.0%)	3 (12.0%)	-	24 (96.0%)	1 (4.0%)	-
College library not as far as main library	19 (76.0%)	3 (12.0%)	3 (12.0%)	21 (84.0%)	3 (12.0%)	1 (4.0%)
Location of library convenient for users	25 (100.0%)	-	-	24 (96.0%)	1 (4.0%)	-

Table 8: Respondents Opinion on Accessibility of Library Materials to Users

	COLVET			COLENG		
	Agree	Disagree	Undecided	Agree	Disagree	Undecided
Materials are accessible to users	22 (88.0%)	1 (4.0%)	2 (8.0%)	20 (80.0%)	2 (8.0%)	3 (12.0%)
Materials are easily retrieved by users	16 (64.0%)	5 (20.0%)	4 (16.0%)	11 (44.0%)	4 (16.0%)	10 (40.0%)
Shelving of materials enhances use of the library	21 (84.0%)	2 (8.0%)	2 (8.0%)	19 (76.0%)	4 (16.0%)	2 (8.0%)

(17 or 68.0%) of the library materials to their needs. In addition, majority of COLENG library users also attested to gross inadequacy of library materials in the library with 44.0% response rate. It can be deduced therefore, that library materials in COLVET library are found to be adequate and relevant to the users needs while the library materials of COLENG library are found to be inadequate to the users of the library needs, even though the materials are relevant to the users needs.

Table 4 above presented data on the users' opinion about the College libraries services. It was revealed that majority of the respondents from COLVET library were dissatisfied with the loan services and photocopying services of the library with response rates of 14 or 56.0% and 12 or 48.0% respectively while, the users were satisfied with the attitude of COLVET library staff with 20 or 80.0% response rate. The same goes for COLENG library, users that affirmed their dissatisfaction with the loan services are (11 or 44.0%) and photocopying services (9 or 36.0%) of COLENG library but, those satisfied with COLENG library staff attitude are 15 or 60.0% response rate. This implies that the users of COLVET and COLENG libraries were dissatisfied with the services of the libraries, though; they found the staff's attitude encouraging.

Table 5 above presented data on the

Hypothesis 1: Location will Significantly Influence Use of Library

Use of library	N	Mean	Std. D	Std. E	Sum of Squares	df	Mean square	F	Sig
Agree	45	1.27	0.447	0.067	1.280	1	1.280	6.400	0.015
Disagree	5	1.80	0.447	0.200	9.600	48	0.200		
Total	50	1.32	0.471	0.067	10.880	49			

Hypothesis 2: Users' Needs and Library Materials will Positively Influence Library Services

Model	Sum of squares	df	Mean square	F value	R^2	Prob
Regression	0.336	2	0.168	0.959	0.039	0.391
Residual	8.244	47	0.175			
Total	8.580	49				

respondents opinion on library opening hours and it revealed that majority of the respondents from COLVET (16 or 64.0%) disagreed with the suitability of the library's opening hours while majority of respondents from COLENG (11 or 44.0%) agreed with the suitability of their library opening hours. However, users from both colleges disagreed with the fact that the College libraries operate the same opening hours as the University's main library. Thus, it can be concluded that the library's opening hours is not suitable for the users.

On the conduciveness of library facilities from table 6 above, the users from both libraries attested to the adequate availability of reading chairs and tables with 25 or 100.0% and 21 or 84.0% response rate for COLVET and COLENG libraries respectively. However, the users of both COLVET and COLENG libraries were unanimous in their opinion that there is no steady power supply in the College libraries. Thus, it can be concluded that the College libraries are not conducive enough for users use.

Table 7 above revealed that respondents from both COLVET and COLENG libraries attested to the suitability of the location of the libraries. Thus, it can be concluded that the College libraries are well sited and located.

Table 8 revealed that users from both College libraries attested to the fact that accessibility and retrieval of library materials by users are easy.

The table above presented the Analysis of Variance (ANOVA) of library location positively influencing use of library. Preference to the study ($F = 6.400$, $df=1$, $P=0.015<0.05$ level of significance). Therefore, F ratio is greater than the approximate table value that is the difference that reflects is statistically significant, thus, the hypothesis is accepted. Hence, it can be concluded that location will positively influence use of library by users

The table above presented the regression analysis of the contribution of the independent variables to the dependent variable of the respective factors. The result revealed that the regression model for the two variables is not significant, that is there is no significant influence between users needs and library materials (F value= 0.959, Prob 0.391>0.05). Therefore, the hypothesis was rejected. That is users' needs and library materials will not positively influence library services.

The last question (no. 25) which sought for the users' comments/suggestions for improvement in the Library services revealed the following request:

- Extension of closing time of the library to 6 pm daily and Saturday opening.
- Provision of a more spacious reading space, tables and chairs for more users.
- Provision of On-line (Internet) connectivity to enhance access to information.
- Procurement of more books to cover the various Departments in each College Library.
- More split air-conditioners and ceiling

fans for comfort.

o Book Loan services and additional photocopying machines to cater for the users' needs.

Recommendations

The College Library users, through their suggestions for improvement in question 25 have spoken their mind. For the College libraries to be able to compete favourably with the main library, some of the services available in the main library should also be extended to the College Libraries as here under recommended :

- Book loans services must be made available to willing and registered users.
- To guide against book theft and mutilation, there should be functional photocopying facilities and at subsidized rate.
- Most users are normally busy between 8 am and 4 pm attending lectures hence, the closing time should extend beyond 4 pm and Saturday opening inclusive.
- Internet facilities are necessary and should be put in place to further enhance and boost the use of the library.
- More users make use of the College Libraries than can be imagined, hence, there is need for a more spacious reading area, more tables and chairs and additional air-conditioners and ceiling fans to make the libraries conducive to reading, with a stand-by generator as back-up incase of power failure.
- There is need for more relevant and current books and journals to evenly cover the various Departments under each College Library.

Conclusion

The College Library is never a duplication of effort, but it complements the services of the main library. Users see the establishment as a welcome development. It must therefore be sustained by ensuring that the remaining Colleges have their own libraries. This will no doubt serve as a prelude to meeting accreditation requirements by the National University Commission (NUC) in the nearest future, in addition to bringing library services to the 'door step' of the users in their respective Faculties, for better preparation and better performance in their various examinations.

References

1. University of Agriculture Abeokuta, Nigeria: 2005/2006 and 2006/2007; 14,68-70.
2. Postgraduate School, University of Agriculture,Abeokuta: Regulations; 10.
3. Adelani Femi. Library use and sandwich students in a College of Education. *Gateway Library Journal*. 1998; 1(2): 81-87.
4. Osinulu LF. Library Use in Ogun State University: a survey. *Gateway Library Journal*. 1998; 1(2): 81-87.
5. Amkpa SA. Students' Use of University of Maiduguri Libraries: an evaluative study. *Gateway Library Journal*. 1999/2000; 2&3: 70-80.
6. Oyesiku FA. The Gender Dimension of Use of Law Libraries in tertiary institutions: A case of Ogun State University Law Library. *Gateway Library Journal*. 1999/2000; (2&3): 81-88.
7. Tsafe AG. Students' Utilization of Usman Danfodiyo University Medical Library, Sokoto. *Gateway Library Journal*. 2004; 7(1): 10-20.
8. Alokun NAT. Library patronage by part-time students: The Yaba College of Technology Experience. *Gateway Library Journal*. 2003; 6(1): 53-63.
9. Afolabi KA. Impact of Library Orientation Programme on the Use of Library Resources by students of Adeyemi College of Education, Ondo, Nigeria. *Gateway Library Journal*. 2008; 11(2): 46-54.
10. Mbashir AL and Adeoti VF. The Usage of Library by Faculty Staff: Kogi State University, Anyigba in perspective. *Middlebelt Journal of Library and Information Science.* 2008; 8(1&2): 73-82..
11. Singh Nirmal. Use of the Libraries of Colleges of Education in Punjab. *Library Herald*. 2009; 47(3): 228-241.

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Study

Periodicals Collection Development in Agricultural University Libraries: Case Study of Maharashtra

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Abstract

Standards and norms of Agricultural University Library are given. This study is limited to four agricultural university libraries in Maharashtra from financial year 1995-96 to 2000-2001. In this study development in periodical collection was observed. The seving of subscription by networking was about 52,06988 and cost of networking these four libraries was Rs.98 lacks. Vsat Internet connectivity to the libraries under study was already available. The consortium can be formed as a society, under the society registration act as a non profit organization. Presently cera.jccc.in ICAR consortium site is available for all agricultural university libraries in India and through that 2000 + online journals are available for online search.

Keywords: Financial year;Periodical collection;Consortium;Vsat Internet connectivity.

Introduction

The role of university library is emphasized in teaching , research and extension activities. This role should be reflected in its library collection which has to provide learning material for faculty for students, teachers, research workers and extension workers.

Library is a place for storing Knowledge under a system that facilitates identification and retrieval as needed by the users. University library is defined as a library, or a system of libraries, established, supported and administered by a university, to meet the information needs of its students, faculty, research and service programs.

Information is published and communicated through journal articles, conference papers, technical reports, theses, patents, specification, standards, monographs, databases, websites, etc. in all subjects.

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Indian Council of Agricultural Research (ICAR) is the apex organization at the National level for the promotion of science and technology programme in the areas of agricultural research and education. ICAR acts as a repository of information and provides consultancy on agricultural engineering, fisheries, agricultural extension, agricultural education, women science and agricultural communication. It has the mandates to co-ordinate agricultural research and development programmers and develop linkages at national and international level with related organizations to enhance the quality of the farming community.

Agricultural Education in Maharashtra

There are four agricultural universities and one veterinary science university in Maharashtra State. Present study is restricted to only four agricultural university libraries in Maharashtra namely (1) Marathwada Agricultural University Library Parbhani, representing Marathwada region, (2) Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library Akola , representing the Vidarbha region, (3) Mahatma Phule Krishi Vidyapeeth Library Rahuri, representing Western Maharashtra and (4) Balasaheb Sawant Konkan Krishi Vidyapeeth Library Dapoli,

represnting Konkan and Mumbai region. These four agricultural universities are headed by Maharashtra Council of Agricultural Education and Research (MCAER), Pune.

Collection Development

Development of agricultural libraries in India is essential prerequisite for development of agricultural research and educational institutions in India. Any agricultural library has a special collection of books, periodicals and other material organized to serve the needs of those engaged in agricultural production.

Standards and Norms of Agricultural Libraries in India

Agricultural libraries in India follow the standards and norms development by the University Grant Commission of India as described in the Indo-American Library Report (ICAR, 1969). The section 54 under the chapter 7 to the said report reads that "it is recommended that the standards developed by the libraries committee of the UGC be adopted by all ICAR institute libraries and agricultural university libraries as minimum requirements and that the future revisions of the UGC standards be adopted as they appear as ICAR's minimum standards. Following are the functions of collection development policy.

The first and foremost function is to identify the relevant reading material required for the on-going programmes of the parent institutions.

The location of the required reading material by subject, by author, by title, by publisher, by source, by distributors or by book seller, etc.

To match the requirements with available resources, here the priorities are to be worked out.

The acquisition of reading material through the reliable channels.

The recording/accessioning work.

Influence of Information Technology on Libraries

Another development which has influenced library activities is Information Technology (IT) applications with the emergence of internet. internet is popularly known as the network of networks. It is now used world wide for personal and group communication, file transfer and for accessing databases on remote computers. Sources like electronic journals, pre-prints, technical reports, numerical and graphic data, software, databases, standards, information on societies, institutions associations, etc. are available on internet. The digital libraries can be accessed through the world wide web (www). Electronic library gives users on line access not only to its on line public catalogue but also to verity of other electronic resources located both within and outside the library.

In electronic environment, most of the information is released Commercially. On licensing for use by libraries consortia approaches for Licensing can be made available by the consortium of the libraries, Amount of subscription. This can result in considerable savings in costs for Expensive electronic products. The combined buying power of the Consortium has a better chance, than to individual libraries. The ability to Provide immediate access from anywhere makes it more shareable than the Peripheral material.

Library Network

Financial constraints have forced the libraries to think of resource sharing and cooperative acquisition of reading material. Every library attracts the facility of network in present age for optimum utilization of resources and offer better services to their users. Even though it is initially cost and technical oriented, every librarian desires to join in his related network for pooling resources for effective resource sharing. A network is a form of agreement or an

administrative structure that links a group of individuals. Organisations and networks who have agreed to work together and share resources.

Objectives of the study

Present research aims to find out such common platforms and tries to suggest requirements to develop effective resources sharing useful to agricultural university libraries in the state.

To find out the present situations of periodicals collection in agricultural university libraries in Maharashtra.

To find out the availability of journals.

To find out the present funds position of the agricultural university libraries.

To find out the method to share the resources with other libraries through network.

To bring uniformity in networking approach (Hardware & Software)

Hypothesis

For the purpose of the present investigation, the following hypothesis was taken up.

Drastic curtailment of funds since 1996-97, has affected the collection development programme of the agricultural university.

The new technology specially information technology has made it essential to share the resources.

No efforts are being taken by the agricultural universities to share the resources.

There is wastage of funds by subscribing common periodicals and databases.

Methodology

Data required for present research was obtained from four agricultural universities in Maharashtra through schedule method. A schedule containing a series of questions was prepared. The concerned data was collected for the period 1995-96 to 2000-2001 i.e. of six years. Researcher visited all agricultural university libraries under study. The concerned data was also collected by interview with the librarians of the libraries under study. The collected data was matched with figures of information sources available in the concerned libraries. After matching, the information was arranged in different tables for presentation and analysis. Observations were recorded in form of discussion and findings of the study.

The efforts were made to find out common and uncommon collection, larger and smaller collection, the effects of new funds formula on collection development, core collection, useful collection, etc.

Case Study

The overall purpose of case study is to obtain comprehensive information about the research object. Data collecting methods used in case study are based primarily upon direct observation. In this method both participant and nonparticipant observations can be used. When necessary, these methods are supplemented by structured techniques such as interviews and questionnaires. In the present study the researcher has used case study method.

Scope and Limitations

Present study is limited to the available Periodicals in the agricultural university libraries in Maharashtra. The study is limited to the four agricultural university libraries in Maharashtra from the financial year 1995-96 to 2000-2001. This study will be useful for the process of modernization of collection development of the libraries under study. The lists of current information sources were collected for cost analysis. The list of Indian and foreign periodicals and databases (online and offline) available in the libraries under study was collected by the investigator. The

Table 1: Library Users Inside the University Campus

Sr. No	Name of the Library	No.of colleges In the campus	No. of students	No. of staff	Total number of users
1.	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola.	4	1318	1565	2883
2.	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	1	1030	1014	2044
3.	Marathwada Krishi Vidyapeeth Library, Parbhani.	5	2340	1682	4022
4.	Balasaheb Sawant Konkan Krishi Vidyapeeth Library, Dapoli.	1	859	317	1176
		11	5547	4578	10125

lists of hardware and software including computers available in these libraries were also collected. The contingency budget provisions and expenditure figures for purchasing periodicals were collected through schedule method. Information about the apex institute i.e. ICAR was also collected from its web-site in the month of December 2001 and also from the annual report of the year 1999-2000.

Data Collection and Analysis

The core tasks of libraries changed from collection development to a structured supply of information and its immediate availability. A new role is required for increasing (inter) national co-operation between libraries to improve and accelerate inter library loan and document delivery. The use instead of the "Owned" collections became the focus for the development of new services and technical facilities. These were development to make it possible for the user to access and retrieve from his work station, irrespective of collection of all kinds of information.

In the present study the latest development in Periodicals collection availability and its accessibility to the library by users were observed considering latest six years acquisitions.

Library Users

The information about library users of the libraries under study is shown in Table 1. The total number of users in four agricultural university libraries was found 10125 out of them 5547 were students and 4578 were staff members. These are the users from the campus only. The members from out side the campus of the universities also use the libraries. It was found that large number of users e.g. 4022 were in Marathwada Agricultural University Library, Parbhani , Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola, Mahatma Phule Krishi Vidyapeeth Library, Rahuri and Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth Library, Dapoli and had 2883, 2044 and 1176 users respectively. Marathwada agricultural is having 5 colleges in side the university campus at Parbhani.

Specialized Subject in Each University.

The uncommon or specialized subjects available in each university are shown in Table 2 below.

Collection of Back Volumes of Periodicals

Back volumes collection of the periodicals in the libraries under study was collected yearly for the six years up to the year 2000-

Table 2: Uncommon or Specialized Subjects

Sr. No.	Name of Library	Subject
1	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola.	Forestry
2	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	Irrigation and water Management
3	Marathwada Krishi Vidyapeeth Library, Parbhani.	Food Science and Nutrition
4	Balasaheb Sawant Konkan Krishi Vidyapeeth Library, Dapoli.	Fishery

Table 3: Collection of Back Volumes of Periodicals

Period	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola.	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	Marathwada Krishi Vidyapeeth Library, Parbhani.	B.S Konkan Krishi Vidyapeeth Library, Dapoli.
1995-96	41355	17609	41350	4232
1996-97	42450	22315	45096	6796
1997-98	43200	22315	45358	6919
1998-99	43200	22470	45504	7011
1999-2000	43355	22816	45669	7100
2000-2001	43355	23357	45845	7885

Table 4: Yearly Number of Journals Subscribed

Sr. No	Name of the library	Yearly Number of Journals Subscribed					
		1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001
1	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola	268	268	182	191	161	179
2	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	24	--	22	155	167	165
3	Marathwada Krishi Vidyapeeth Library, Parbhani.	362	116	110	112	112	96
4	B.S Konkan Krishi Vidyapeeth Library, Dapoli.	124	123	92	89	97	54

Table 5: Expenditure on Current Periodicals During Last 6 Years

Sr. No	Name of the library	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	Total
1	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola	1293202	1511270	1682117	501999	739972	484655	6213215
2	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	400000	251221	150322	520025	603027	547267	2470267
3	Marathwada Krishi Vidyapeeth Library, Parbhani.	1460000	241035	159157	217159	35000	584092	2696443
4	B.S. Konkan Krishi Vidyapeeth Library, Dapoli.	250000	38085	11381	40500	33344	368717	742027

2001 and is shown through the Table 3.

Table 3 shows that Marathwada Krishi Vidypeeth library Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library was having larger collection of back volume i.e.45845 and Balasaheb Sawant Konkan Krishi Vidyapeeth library had lowest collection i.e. of 7885 back volumes. The rate of periodical back volumes collection development was very low in these libraries in study period. It shows the curtailment of periodical subscription was adopted due to shortage in funding.

Expenditure on Current Periodicals

Yearly expenditure on current periodicals was collected and analysed for availability of current periodicals collection. It has been observed that the rates of subscription of periodicals are constantly increasing and funds provision is decreasing and resulting in decrease of the number of current periodicals in all the four university libraries under study due to the decreased availability of budget. The libraries had curtailed the number of journals subscribed. Curtailing of the periodicals affect the information services. The users could not get the information required for their work. The details of expenditure incurred for subscription of periodicals for the libraries under study are given in Table 5.

It was observed that in the year 1995-96, the expenditure on subscription of periodicals made by Dr. Panjabrao Deshmukh Krishi Vidyapeeth and Marathwada library, was 12, 93,202 and 14,60,000 respectively which was reduced to 4,84,655 and 5,84,092 for the years 2000-2001 and figures show that both the libraries previously had large number of periodicals . It was reported by the librarians in the interview that till 1995, these libraries were getting grants from the State Government for purchase of reading materials

Total 6: Current Journals in the Year 2000-2001

Sr. N	Name of the Library	Indian	Foreign	Gratis	Total
1.	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola.	128 (46.20)	51 (18.41)	98 (35.37)	277 (100)
2.	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	137 (52.49)	28 (10.72)	96 (36.78)	261 (100)
3.	Marathwada Krishi Vidyapeeth Library, Parbhani.	87 (33.33)	9 (3.44)	165 (63.21)	261 (100)
4.	Balasaheb Sawant Konkan Krishi Vidyapeeth Library, Dapoli.	392 (42.60)	102 (11.08)	426 (46.30)	920 (100)

through the head material and supply. This assistance was reduced up to 1/20th funds. It was reduced to 15% of the annual salary payment of that library staff; every year which has resulted in curtailment of budget for library as shown in Table 5. After applying new funds formula from dated 13th Oct. 1995 through G.R.No. agri. V2191/CR –128/ 20A,expenditure on the subscription of periodicals has decreased badly. Now a days CD ROM databases, online database subscription and networking of sources through consortium could help the libraries for bibliographical control of the information sources.

Agricultural libraries under study are not having journals in electronic form except electronic databases at present. The abstracting and indexing databases were made available in less number.

As shown in the Table 6. the number of gratis current journals available in the libraries was larger than the number of journals subscribed. In Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library during the years 1995-96 total journals available were, 624, out of which subscribed journals were 268. The other libraries were getting comparatively less journals on gratis in the corresponding years.

The number of journals available in the library during the year 2000-2001 include subscribed + gratis + exchange basis journals and 46.3 per cent current journals were available on gratis in these libraries. On an average the available Indian journals were 43.65 per cent and foreign journals were 10.91 per cent in the libraries under study. It was also found that Marathwada Krishi Vidyapeeth Library received 165 journals on gratis and Balasaheb Konkan Krishi Vidyapeeth Library had 67 journals on gratis in time.

It can be observed from the Table 6 that the number of foreign journals subscribed was smaller than the number of Indian journals in all the libraries under study. The Marathwada Krishi Vidyapeeth Library was having 104 foreign journals in the year 1994-95 i.e. this library had curtailed the number of foreign journals from 104 to 9. The number of foreign journals was curtailed proportional to the curtailment of funds provision in this library.

Previously funds were provided to the agricultural universities in Maharashtra as per the average expenditure of last three years and requirements of future years. University lilbraries were getting ample funds for

Table 7: New Funds Formula

Sr. No	Item	Higher education including library
1.	Salary payment	100%
2.	Contingency (related to the salary and allowances of the staff of that office	--
2.	2000-2001	15 % of the salry pament
2.2	2001-2002	14 % of the salry pament
2.3	2002-2003	13 % of the salry pament
2.4	2003-2004	12 % of the salry pament
2.5	2004-2005	11 % of the salry pament
2.6	2005-2006 and onwards	10 % of the salry pament

Table 8: Yearly Addition of Theses and Agresco Reports

Sr. No	Name of the Library	Average of Agresco reports of Research Projects submitted during 1995-2000 per year	Average Theses submitted during 1995-2000 per year
1.	Dr.PanjabraoDeshmukh Krishi Vidyapeeth Library, Akola.	20	232
2.	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	30	165
3.	Marathwada Krishi Vidyapeeth Library, Parbhani.	44	245
4.	Balasaheb Sawant Konkan Krishi Vidyapeeth Library, Dapoli.	19	73
		113	715

purchase of books and journals on an average 20 lakhs per year before the year 1996-1997.

By applying above funds formula the contingency funds provision comes down seriously in the libraries under study.

Contingency funds were utilized for purchase of reading materials. The contingency funds were drastically decreased from the year 1996-97 onwards.

These libraries requires to increase more yearly receipts to maintain the minimum requirement of funds for essential expenditure. The library receipts and library fees collected from the students could be used for misseleaneous expenditure . Now students of all four Universities are paying library fees Rs.200 per semester.

Research

It can be observed from Table 8 that there were more than 113 research projects on different subjects and crops in these universities. Progress reports of researches are submitted in Annual Joint Agresco meeting. These progress reports are the annual reports of the actual research done in the year. Information from these research reports and research progress reports can be utilized by the other research works at the state, national or international level to strengthen their researches and to avoid duplication of research.

Computer Systems Available

Marathwada Krishi Vidyapeeth Library is having its own server and 10 terminals were attached to the server for internet services. In other three university libraries, library computers were connected to the central server in university computer center. Details about computer systems, softwares available in the libraries under survey are shown in the Table V sat internet connection is available in all libraries under study. Windows operating system is available in

Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library and Mahatma Phule Krishi

Table 9: Computer System and Softwares Available

Sr. No	Name of the Library	Server	Terminals	P.C.	Printers	Software	Internet
1	Dr.Panjabrao Dshmukh Krishi Vidyapeeth Library Akola	--	--	5 Pentium III	01	Windows Operating system	VSAT
2	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	--	--	2 Pentium II	01	Windows Operating system	VSAT
3	Marathwada Krishi Vidyapeeth Library, Parbhani.	1	10	3 Pentium II	02	Linux + Windows Operating system	VSAT
4	B.S Konkan Krishi Vidyapeeth Library, Dapoli.	--	--	2 Pentium II	02	Linux + Windows Operating system	VSAT

Table 10: Cost of Required Periodicals

Sr. No.	Name of the Library	Subscription Type	Single set sub-subscription	(A) present expenditure	(B) Amount required for four copies	(C) amount required for networking
1	Four Agricultural University Libraries under study	Common Indian Journals	13119	52464	52464	26232
2	PDKV, Library, Akola	Common Indian Journals	8945	8945	35780	17890
3	MPKV, Library, Rahuri.	-do-	24789	24789	99156	49578
4	MKV, Library, Parbhani.	-do-	16115	16115	64460	32230
5	BSKKV, Library, Dapoli.	-do-	7175	7175	28700	14350
6	Three libraries, PDKV, MPKV and BSKKV	Common Indian Journals	133033.68	3991101.04	532134	266067
7	Two libraries under study MPKV and BSKKV	-do-	87414.56	17429	349658	174829
8	Two libraries, PDKV and MPKV	-do-	25308	50616	101232	50616
9	PDKV, Library, Akola	Common Indian Journals	883420.41	883420.41	3533682	1766841
10	MPKV, Library, Rahuri.	-do-	385654	385654	1542616	771308
11	MKV, Library, Parbhani.	-do-	46070	46070	184280	92140
12	BSKKV, Library, Dapoli.	-do-	164405	164405	657620	328810
13	Four Agricultural University Libraries under study	Common Indian Journals	78745	314980	314980	157490
14	MPKV, Library, Rahuri.	CD-ROM database uncommon	6900	69000	276000	138000
15	MKV, Library, Parbhani.	uncommon CD-ROM & online database	1098179	1098179	4392716	2196358
	Total Rs.		3041369.65	3695742.45	12165478	

Vidyapeeth Library, whereas Linux operating system with windows operating system was available in Marathwada Krishi Vidyapeeth Library and B.S. Konkan Krishi vidyapeeth Library.

Resource Sharing

It was found that all the libraries under study were ready for agreement to provide the resource sharing . In study period only Marathwada Krishi Vidyapeeth Library had signed network services agreement with DELNET, Delhi.

Status Report of Computerised Services

It was found that Computers available in the libraries under study were used for information search through indexing, internet and Email facilities by library users. Computers were not used for circulation, stock verification and acquisition in all libraries under study. Marathwada Krishi Vidyapeeth and Balasaheb Sawant Konkan Krishi Vidyapeeth libraries were using computers for house

Table 11: Summary of the Savings through Networking

Sr. No	Name of the Library	Common/ uncommon journals subscription amount	Subscription of single set	Saving amount (Rs.) (of 2 set)
1	All four Agricultural University Libraries under study	Common Indian Journals	13119	26232
2	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola	Common Indian Journals	8945	17890
3	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	-do-	24789	49578
4	Marathwada Krishi Vidyapeeth Library, Parbhani.	-do-	16115	32230
5	B.S Konkan Krishi Vidyapeeth Library, Dapoli.	-do-	7175	14350
6	Three libraries, PDKV, MPKV and BSKKV	Common foreign Journals	133033.68	266067
7	Two libraries under study MPKV and BSKKV	-do-	87414.56	174829
8	Two libraries, PDKV and MPKV	-do-	25308	50616
9	Dr. Panjabrao Deshmukh Krishi Vidyapeeth Library, Akola	uncommon foreign Journals	883420.41	1766841
10	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	-do-	385654	771308
11	Marathwada Krishi Vidyapeeth Library, Parbhani.	-do-	46070	92140
12	B.S Konkan Krishi Vidyapeeth Library, Dapoli.	-do-	164405	328810
13	Four Agricultural University Libraries under study	Common subscription of AGRIS	78745	157490
14	Mahatma Phule Krishi Vidyapeeth Library, Rahuri.	Subscription of uncommon CD-ROM database	6900	138000
15	Marathwada Krishi Vidyapeeth Library, Parbhani.	Uncommon online database subscription	1098179	2196358
	Total Rs.		3041369.65	6082739.20

keeping and account works. Mahatma Phule Krishi Vidyapeeth and Marathwada Krishi Vidyapeeth libraries were using computers for cataloguing purpose. Marathwada Krishi Vidyapeeth library is using computers for database creation, serials control, and circulation.

As per the Table 10 cost of present subscription of periodicals and databases in the libraries under study was rupees 3695742. The cost of four sets required for four libraries under study was rupees 12165478.

The additional amount required for four sets subscription will be calculated by deleting the present subscription amount (A) from the four sets required amount (B) for users of the libraries under study. Rs. 12165478 – 3695742 = Rs.8469736.

Also the additional amount required for networking will be calculated by deleting A from C i.e. 6082739 – 3695742 = Rs. 2386997. The savings will be Rs. 8469736 – 2386997 = Rs. 6082739.

The profit or savings also will be calculated

Table 12 : Minimum Computer Hardware, Software and Specifications Required at each Node

Sr. No	Item	Specification	Price
1	Intel P-IV	Interl P-IV with 2.7 GHZ clock speed, with main memory of 32 MB and disc space with SCSI HDD suport, 1 GB RAM, CD RW, P-IV PC with multimedia and NW card.	1.80 lakhs
2	Terminals	At least 32 terminals including four P-IV PC with multimedia and NW cards, two colur grphics terminals	3.70 lakhs
3	Provision for connecting upto 128 terminals	Optic fibre connectivity	2.20 lakhs
4	Printers	Two line printers of 1 pm and two letter quality printers, one laser printe and one web camera	3.10 lakhs
5	Communication interface	Preferable through x.25 pad	5000
6	Operating system	Linux	5000.00
7	Software	SLIM	1.90 lakhs
8	UPS/ inverters	2 KVA capacity	80000.00
9	Satellite Communication facility with an earth station and interface to the computer system		7.00 lakhs
10	Two telephone lines exclusively for computer communication		10000.00
11	Separate isolated good earthing to which no other load is to be connected and electrification		1.50 lakhs
12	One scanner		0.05
13	Two modem		0.10
14	Clock speed	800 Mhz	--
15	Storage requirement	20 GB	--
16	Disck I/O	5 M bytes/hr	--
17	Printing load	2000 pages/day	--
18	Communication load	5 M bytes/day	--
19	Fax	3000 k bytes/day	70000

Table 13: Total Amount Required for Networking of the Four Libraries

Sr. No.	Name of the library	Networking amount required
1	Dr.Punjabrao Deshmukh Krishi Vidyapeeth Library	Rs.2485000.00
2	Mahatma Phule Krishi Vidyapeeth Library	Rs.1195000.00
3	Marathwada Krishi Vidyapeeth Library	Rs.1815000.00
4	B.S. Konkan Krishi Vidyapeeth Library	Rs.2445000.00
	TOTAL	Rs.7940000.00

by B-C i.e. Rs. 12165478 – Rs. 6082739 = Rs. 6082739. This amount Rs. 6082739 is the half of the amount required for four sets subscription required for the libraries under study.

The total subscription amount of uncommon databases comes to rupees 1167179-00 as on 31st March 2001. This was the subscription amount of one set of uncommon databases. As per consideration of double subscription for network, the saving of subscription amount of uncommon databases comes Rs.1167179 x 2 = 2334358 and saving of common AGRIS CD ROM database will be Rs. 78745 x 2 = 157490. The

Table 14: Hardware Configuration at Networking of These Libraries

Sr. No	Computer pad cum switch	Specification
1.	X.25 Pad cum switch	
a.	Function	Navy port should be configurable to synchronous (X.25) on asynchronous
b.	No. of ports	16
c.	Line speed	Upto 64 K bps on synchronous up to 19.2 K bps on asynchronous
d.	No.of virtual	At least 350 circuits
e.	Throughput	80 bps with 128 byte packets
f.	Call set up capacity	20 per second
g.	Frame level	Module 8
h.	Maximum pocket size	Up to 512
i.	Protocols supported	X.25, x.3, x.28, x.29 CCITI 198 recommendations.
j.	Power requirements	AC 230 V + 10% at 50 Hz + 2%
k.	Environment	Ambient temperature, 5 to 40 degree C
2.	X.25 Interface card	
a.	Bus compatible	With either at Bus or VME Bus
b.	Logical channels	At least 16
c.	Line speed	Up to 19.2 k bps
d.	Protocols supported	x.25 1984 recommendations x.3 x.28 x.29 server software (1994 recommendations).
3.	Modems	2..
a.	Data format	Asynchronous synchronous (Selectable)
b.	Data rate	28800/14400/9600/2400/1200/300 bps with fall back capacity.
c.	Compatibility	V.22, V.22 bis, V.23, V.21
d.	Interace to DTE	V.24/V.28 (Rs.232 C)
e.	Line interface	2 wire dial up (full duplex) and 2 wire leased line (full duplex)
f.	Error control	Built in
g.	Diagnostics	Built in
h.	Dialig capacity	Auto/manual dial auto/manual answer v.25 bis compataibility.

total subscription amount of uncommon and common databases comes Rs. 1167179 + 78745 =1245924.

It can be observed from Table 11 that subscription of single set of common and uncommon periodicals and databases comes cost of rupees 3041369.6 and cost of network version comes rupees 304139.6 x 2 = Rs.6082739. Saving of two sets of periodicals through networking comes Rs. 6082739.

Arunachalam and Umarani (1998) said that the analysis of publications in CAB abstract shows contributions from Indian in agricultural research.

Maharashtra state is the 4th in state wise ranking in India with 851 papers in the year 1998. CAB abstract database cover 80% published research on agricultural and related subjects.

As shown in the Table 11 saving of subscription amount through network version subscription of periodicals and databases will be rupees 6082739 for one year.

Costing of the Project

The funds required for networking of these libraries may be raised from the saving subscription amount of common and uncommon sources of information through networking facilities like, current content service, document delivery service, e-journals, full text online databases subscription and becoming member of different networking online data bases. The offline databases can also be shared to each other for saving of amount of subscription by agreement between these libraries.

Total amount for networking of the libraries under study comes Rs. 7940000. Miscellaneous items of Rs. 1 lakh may be required to each library under study for networking .Therefore total amount required for networking of the libraries under study comes Rs. 8340000.00

Suggested Network Hardware configuration at each node in the network system is as under.

The above specifications are to be included in configuration of computer equipment required for networking of the libraries under study. The networking cost of these libraries under study comes to Rs. 8340000 and saving by network subscription comes rupees 6082739. The cost of the networking will be meet within two years by saving amount of network subscription of the libraries under study and network will be feasible.

Presently Indian Council of Agricultural Research is providing online journals on consortium basis, cera.jccc.in site with IP base search provision to all state agricultural university libraries in India. The full text journals included in cera.jccc.in are more than 2000. Free journals site open j-gate provides more than 4000 journals online in full text from informatics Indian Ltd. Bangalore. All four agricultural university libraries under study are getting online journals as above to their library users. i.e. partially networking for journals subscription is already done through above online databases. Also these libraries can share their sources of information through online digital library services and network services.

Conclusions

Majority of the foreign and Indian journals available in these libraries were found uncommon. These uncommon journals and serial publications could be provided to each other by networking through online digital library services by networking these libraries. Four copies of common foreign journals may be reduced to single copy by agreement between these libraries and resource sharing and networking these libraries. The saving of the subscriptions amount of foreign and Indian periodicals will be rupees 2715140 and saving of databases subscription will be rupees 2491848 i.e. total subscription saving comes to around rupees 52.06.988. Cost of networking is 98 lakhs.

There were some special areas of collection development in these libraries. It was some special areas of collection development in these libraries. It was found that there was one different single subject for post graduate level inside the university campus and collection of that subject was more than other University libraries e.g. forestry subject in Dr. Punjabrao Deshmukh Krishi Vidyapeeth Library, irrigation and water management in Mahatma Phule Krishi Vidyapeeth Library, food technology and food science and nutrition in Marathwada Krishi Vidyapeeth Library and fishery in B.S. Konkan Krishi Vidyapeeth Library, Dapoli were the special post graduate courses identified. The collection on these subjects were found more than other libraries under study.

It was proposed to prepare a full text database on Agresco Reports and theses submitted in these universities under study. This was the original research done in these universities and other researchers required to know about it. This database could earn money or make receipt for development of library network in the libraries under study.

The yearly database subscription amount could be collected from other libraries in Indian and worldwide libraries. It was proposed to collect the CDs with the theses and agresco reports submitted and prepare a full text database to provides this original information to the researchers in the world.

Indian Council of Agricultural Research, New Delhi has already provided V sat Internet connection to these universities and these universities has provided internet acces to the library users. ICAR has also provided one multimedia personal computer Pentium-II, one UPS, MS office and one heavy duty printer to the agricultural university libraries as per their requirement for provision of internet services

to the library users.

The researcher has identified core collection, common and uncommon periodicals, special areas covered by each library. Further, the requirements in respect of hardware, software and for infrastructure are considered. Based on this information networking of the journals subscription through consortium is essential. It is found that the cost of the network can be met within two years in the form of savings achieved through resource sharing.

Networking of the libraries under study was found essential immediately. The networking of these libraries was recommended to strengthen the information networking services. Now library and information services of the libraries under study may share their sources of information through online digital library services.

Administration of Network

Consortium approach would be ideal for governing and operating the network. It is proposed that a society will be formed and registered with all the four participating libraries as members and the nominees of these libraries would function as a voverning council to look after the administrative aspects of the network. The council comprises of members/nominees of all the participating libraries. The governing council could be headed by the librarians of four agricultural university libraries alternately. The consortium can be formed as a society, under the society registration act, as a nonprofit organization.

The overall management and administration of this network will in the Board of Government and the Secretary or executive will be attending to the day to day operations and will be reporting to the Board.

References

1. Busha CH and Harter SP. Research methods in librarianship, techniques and interpretation. 1980: 151-153.
2. Dominic CJ. Measuring the collection development of Karunya Institute of Technology Library : A case study. 2000; 22(1) : 15-25.
3. Evans GE. Developing library and information center collections 2nd . Clorado libraries; 1987: 13.
4. http://www.icar.org.in/natp.html ICAR-INFLIBNET training programme for Agricultural Librarians on networking and e-resource management. 4-17th Aug., 2003, 1-5.
5. Indian Council of Agricultural Research: Annual Report. 2001-2002: 1-10.
6. Indian Council of Agricultural Research: Indo-American Agricultural Library Survey Team: Final Report by Dorothy Parker, New Delhi: 1969; 49-60.
7. Indian Council of Agricultural Research: ni.in/ icar, 30th Dec. 2001.
8. Maharashtra Council of Agricultural Education and Research Prospectus, Pune-2001-2002.
9. Mayee CD. Perspective plan (2000-2005) State Agricultural University of Maharashtra, 1998, Preface.
10. Perumalsamy K and Karunanithi. Modernisation of Agricultural University Libraries. *University News*. 2002; 40(5): 8-12.
11. Sujatha G. Resource sharing and Networking of University libraries, ESSESS, New Delhi: 2000; 24-31.
12. Vashishtha CP. International information system for agricultural sciences and technology (AGRIS). *Lucknow Librarian*. 1981: 13(2) : 71-80.

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[1] Flink H, Tegelberg Å, Thörn M, Lagerlöf F. Effect of oral iron supplementation on unstimulated salivary flow rate: A randomized, double-blind, placebo-controlled trial. J Oral Pathol Med 2006;35:540-7.

[2] Twetman S, Axelsson S, Dahlgren H, Holm AK, Källestål C, Lagerlöf F, et al. Caries-preventive effect of fluoride toothpaste: A systematic review. Acta Odontol Scand 2003;61:347-55.

Article in supplement or special issue

[3] Fleischer W, Reimer K. Povidone iodine antisepsis. State of the art. Dermatology 1997;195 Suppl 2:3-9.

Corporate (collective) author

[4] American Academy of Periodontology. Sonic and ultrasonic scalers in periodontics. J Periodontol 2000;71:1792-801.

Unpublished article

[5] Garoushi S, Lassila LV, Tezvergil A, Vallittu PK. Static and fatigue compression test for particulate filler composite resin with fiber-reinforced composite substructure. Dent Mater 2006.

Personal author(s)

[6] Hosmer D, Lemeshow S. Applied logistic regression, 2nd edn. New York: Wiley-Interscience; 2000.

Chapter in book

[7] Nauntofte B, Tenovuo J, Lagerlöf F. Secretion and composition of saliva. In: Fejerskov O, Kidd EAM, editors. Dental caries: The disease and its clinical management. Oxford: Blackwell Munksgaard; 2003. p. 7-27.

No author given

[8] World Health Organization. Oral health surveys - basic methods, 4th edn. Geneva: World Health Organization; 1997.

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[9] National Statistics Online—Trends in suicide by method in England and Wales, 1979-2001. www.statistics.gov.uk/downloads/theme_health/HSQ 20.pdf (accessed Jan 24, 2005): 7-18. Only verified references against the original documents should be cited. Authors are responsible for the accuracy and completeness of their references and for correct text citation. The number of reference should be kept limited to 20 in case of major communications and 10 for short communications.

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