Chapter I

Introduction

1.1. Preamble:

Research is as old as fire and water to the human being. He/she actively repeated search for food and it made him/ her much wiser than before he was. And, thus each time man overcomes the challenges, which are put forth by the nature. Every time he becomes more prepared than last. This unorganized and scattered search, sometimes made him come across things that were new for him. Many time he wondered when saw those new things and try to familiarize himself with newly born facts and situation he would start searching again and again.

Nature plays a significant role in human life. It also gives and put forth challenges for human existence. It is this quest to answer the challenges leads to research. Research is more than study; it has assumed a new meaning in the twentieth century. The old French word *cerchier* (Latin *circare*) meant ‘to go about’. The English word search now days means to survey inquiringly or to examine or to inspect closely. The word research has been coined by the addition of the prefix “re” such as we have in word research originally had the same connotation as the word reunite and redo mean today. But now it is purely a technical term it means a systematic investigation in field of knowledge to discover or establish facts or principles. It also means a fresh approach to a subject or interpretation of facts (Sinha, 2004).

In present scenario research becomes an academic activity and as such the term should be used in a technical sense. According to Busha research is, “a systematic quest for knowledge that is characterized by disciplined inquiry. Efficient and effective approach to expand knowledge is the conduct of special planned and structured investigations a process known as research” (2004). Thus it can be said that research contributes new as well as additional knowledge to the existing stock of knowledge making for its advancement. This is a mean where researcher invents truth new ideas and theory with the help of study, observation comparison and experiment. In another word the search for knowledge through objective and systemic method of finding solution to a problem is called research.
1.2 Definitions of research:
The following definitions can clarify the meaning and concept of research;

1.2.1 Webster’s International dictionary (2006) has stated research as, “a studious inquiry or examination; especially critical and exhaustive investigation or experimentation having for its aim the discovery of accepted conclusions theories, or laws in the light of newly discovered facts or the practical applications of such new or revised conclusions theories or laws”.

1.2.2 According to S.R. Ranganathan, “research represents a critical and exhaustive investigation to discover new facts, to interpret them in the light of known ideas, theories and laws, to review the current laws and theories in the light of the newly discovered facts to apply the conclusion to practical purpose”. (Board of library and information science, 2005).

After the reading and observation of these definitions it can be said that research have the following features;

a) Research is a systematic and critical investigation.
b) It aims at the discovery of new facts and their correct information.
c) It is also the revision of accepted laws or theories in the light of the new facts.
d) It can be practical application of new or revised conclusions theories or laws.

Coming to the first feature, the word systematic means that the entire procedure of the investigation done under certain principles. The word critical means that the researcher takes care of both kinds of facts, one that favors his hypothesis and the other that goes counter to his assumptions. It follows then, that the researcher must not be prejudiced or subjective in his observation, experiment analysis or interpretation or should he be erratic in the arrangement of facts nor ignores the facts that shatter his postulates or hypothesis. Suppose a researcher assumes that information technology doesn’t affect traditional library services. And if the researcher feels at any stage of his research work that information technology has affected those services, he must revise his hypothesis. This type of ignorance must be avoided by him.

Secondly research must contribute great and impressive knowledge in the respective area. It is possible only when researcher discover new facts or laws or correct old theories of the same area.
Thirdly, many a times research means such a kind of investigation which may revise, modify or reject established theory.

Finally, applied kindness is the feature of research; here the researcher applies his outputs or conclusions for practical purposes.

1.3 Importance of research:

Necessity as well as curiosity is the mother of research. Research comes next to invention. Research is fact finding activity; 21st century is the century of research. Applied research has become of paramount importance, because of the population explosion, reduction in natural resources and luxurious lifestyle. Most of the developed countries and multinational companies are taking special interest in research and they are encouraging researchers and experts.

1.4 Importance of research in social sciences:

Social science studies the human behavior, its aim is to have a deep insight into the human lifestyle, ideology, and behaviour to look at life. The fast paced changing lifestyle, perspectives are making tremendous changes in the social phenomenon. It directly shoulders responsibility on experts in social sciences and increases the importance of research therein.

1.5 Benefits of research:

Hawkins and Sorgi, (2003) have listed the following benefits which research contributes;

i. A critical or scientific attitude is developed;

ii. Research gives the chance to study a subject in depth;

iii. A researcher knows how to use a library and resources available in different libraries;

iv. A researcher learns to critically access the literature in the subject of study;

v. Research helps to develop special interests and skills in the researcher;

vi. Helps in understanding the attitude of others whether in routine interaction or research laboratories;

vii. After successfully completing a research project, a candidate secures higher degree say M. Phil. Or Ph.D.
Where

\[ F \] = Feedback (Helps in controlling the subsystem to which it is transmitted)

\[ FF \] = Feed forward (service the vital function of providing criteria for evolution)

**Figure 1.1: Research process in flow chart.**

Figure 1.1 shows how research process flow. It starts from a problem and ends with the presentation of a report. In another word, it can be said that a question arises in the mind of a researcher and it stops when he gets the answer or solution of that problem.

1.5.1 Objectives of research:

Research is an activity undertaken by the researcher with some specific purposes. There are some objectives put by the researcher to undertake such research activity. Following objectives may apply to conduct any research.

i. To verify and test important facts;
ii. To find solutions of the problems rendered within the scientific, nonscientific and societal area;
iii. To identify the causes and effect relationship among the event, process or phenomenon;
iv. To develop new concepts, theories, and tools to solve and understand the problems occurred in the respected area of scientific and nonscientific regions;
v. To overcome the problems arising in the everyday life of the people.

1.6 Information:

Since evolution, information has been indispensable throughout the every age viz, Stone Age, mettle age and present era, for the betterment of the human life. It becomes forth basic need of human being next to food, cloth, and shelter. Even to fulfill these needs one has to take the help of information. Today’s society can be defined as information dominated society. Every day like it or not, everyone is bombarded by news, opinions, facts, figures and same material. Everyone is connected to countless information sources about today’s local community, society, and of course the world also.

1.6.1 Definitions of information:

According to Seetharama (1999), “information is data that has given shape. It may be considered as processed data. Thus information is data plus the meaning, which has to be a result of human action”.

Shera, expressed his views about the information, “information is that which is transmitted by the act or process of communication, it may be a massage, a signal a stimulus it assumes a response in the receiving organism and therefore possess response
potential its motivation is inherently utilitarian it is instrumental and it usually communicated in an organized or formalized pattern, mainly because such formalization increases potential utility” (Kumar 2004).

1.6.2 Data information and knowledge:

The term data derived from the Latin word ‘datum’. It means to give something (Mishra & Kumar, 1999). Data; is the smallest piece of information. Data is a collection of scattered facts and observations. In another words it can be say that meaningful, well organized, analyzed, Crosse checked sorted, summarized purposefully selected, sorted collection of data means information.

Information is the representation of data (or raw facts) to a receiver; it is the principal resource of a modern organization. Information is data in a useable form, processed in some way; it is data plus interpretation (Wikipedia)

The term knowledge is the fact or condition of knowing something with familiarity gained through experiences or associations. The most commonly used definition of knowledge is “the ideas or understandings which an entity possesses that are used to take effective action to achieve the entire’s goal” (Kumar, 2004). Knowledge is the full utilization of data and information.

The following examples may make these ideas a little more clearly.

Cotton → Data
Yarn → Information
Cloth → Knowledge

When cotton is processed it turns in to the cloth. Through same process data can be change into information, so one can generate this information into the knowledge and use for particular purpose. In general, both data and information are the building blocks of knowledge. All these are handled in libraries and information centers.

1.6.3 Characteristics of information:

i. Information is a property of the universe like matter and energy;
ii. Any system, which performs as an organization, contains information.
iii. It has a particular meaning.
iv. Every resource which is usable depends upon the information. Without information it has no value or no own entity.
v. As a resource Information doesn’t reduce no one can change, diminish by wider use sharing.
vi. Information is alive; Information can exist only in the human mind. Information is what he observes, remembers and retrieves and what analyses, intimates and integrates.
vii. Information can be compress; it may concentrate integrate summarize. It is much easier to handle.
viii. Information can convert into the capital, labor or physical materials.
ix. Information can diffuse It tends to leak and the more it leaks the more we have.
x. Information is shareable. One can share it through various modes, like communication, exchange, transmission, publication etc.
xi. Information is not consumed in its use.
xii. It is universal, particularly in the natural science and technology.
xiii. Information can use unlimited users at a time at several places.

As per the above discussed characteristics it is clear that information exists in a variety of forms and may be transmitted from one system to another and it undergoes a series of transformations.

1.6.4 Qualities of information:

Following qualities make information special, valuable effective and attractive as well;

1) Accessible  2) Comprehensiveness
3) Precision  4) Compatible
5) Timeliness  6) Clarity
7) Flexibility  8) Verifiability
9) Un-biasness  10) Quantifiability

Brophy provides a list it is more or less the same of qualities as the above mentioned qualities like relevance, historicity, completeness and reliability. His
explanation of the importance of relevance and timelessness are worth noting. (Koranne 2010).

A) Relevance: irrelevant Information that is not information at all, but data irrelevant information is known to be counterproductive. To have information used for purpose for which it has no relevance is likely to be worse than having no information at all.

B) Timelessness: this is very important quality of information. If the information gets too late, the decision would have already been taken and information becomes useless. Same time if it arrives too early, its significance will be lost at the crucial moment, perhaps because of ‘information overload,’ or it will appear to be irrelevant will be ignored and may not be recalled later.

1.6.5 Types of information:
Shera has divided information into the six types, these are as follows;
i. Conceptual information – relating to ideas, theories and hypothesis about the relationship, which exists among the variables in an area.

ii. Empirical information – relating to data & experience of research, which may be drawn from our self or communicated through others.

iii. Procedural information – This is the data obtained manipulated and tested through investigation.

iv. Stimulatory information – is motivated by oneself or the environment.

v. Policy information – is focused on the decision making process.

vi. Directive information – is used for coordinating and enabling effective group activity (Jain, 2009).

1.6.6 Use of information:
Information covered every walks of human being. There is no part or activity of life of human being affected by information. People use information for daily needs general as well as particular purposes. There are following areas where people use information;

A. Research and development:
Information has been recognized as power. Some people do not mince words to declare that information is power. Anyone who possesses the latest up to date information
and technical knowhow dominates the other sectors in the society. This is true in case of all countries in the world developed or undeveloped. Given the importance of information, vigorous research activity has been promoted in all fields of life whether in science and technology or in social science or in humanities ever since the advent of the industrial era. The increasing research activity produces huge amount of information same time these activities need information to solve their problem as well as to run research activities continuously. Research plays dual role in the information sector it produces information as well as uses it.

B. Business and industry:

Industries spend a huge amount on the research. They are not interested only in the betterment of goods but also takes much more interest in the area of supply, customer’s tests competitors in the market, supply of raw material, governments policies, their effects etc. for these every aspects businesses industry sectors need information. They need supply of information without any disturbance. Information is considered as vital not for large scale industries only but it is parallel important to the small scale industry also. Big industries have lot of funds so they establish their own information units. Some industries establish it cooperatively. But small scale industries are to be depend on the others like national information systems

It can say that business and industry sectors need information they use it in their daily business as well as in the policy making.

C. Governmental planning and policy making:

Every minister of the government needs up to date information for the management of national resources general administration. They collect the information of present situation of national resources and according to their availability make the policies. With the help of available information they make the changes in the administration.

For the collection of latest information and to analyze it government establishes information systems. Indian government also established such centers; i.e. Agricultural and environment information system; Industry and technology information system etc. Government collects information through these systems and uses it into the policy making.
1.6.7 Steps in the use of information:

P. S. G. Kumar (2004) suggested following steps in the use of information;

i. Awareness or identification of the problem;
ii. Definition or collection of relevant information;
iii. Development of alternative hypothesis;
iv. Evolution of alternatives;
v. Selection of optimum solution or alternatives;
vi. Implementation;
vii. Review of the results or performance as a consequence of the implementation of decision.

1.6.8 Information channels:

Information plays a comprehensive role in research and every human activity. But some questions arise here, how information can receive? Who will provide it to the person in need? Where he will browse the required information? Information channels can play a vital role in this regard. These channels disseminate information quickly. Person in need of information can collect his required information through these channels. Encyclopedic dictionary of information technology (2003) has stated information channel as, “a path along which information can flow”. There are several information channels, today which can be divided into two categories broadly;

i. Formal information channels;
ii. Informal information channels.

Formal channels again divided in three types a) Educational Institutes; b) Libraries and information centers; c) Media.

Informal channels have not any limit. One can include everything in this category where information can get but these sources or channels are not fully involved in information dissemination process. Discussion with experts of respective area, colleagues, debts etc. are the channels where user can collect information time to time.

1.7 Correlation between research and information:

Research is a process which gives birth to the following aspects;

i. Redefining the assumptions and information of the specific subject;
ii. If an established theory and laws of that subject are wrong a new theory or laws are introduced instead;

iii. Additional information is added to the recognized theory and it is expanded and made more effective;

Information is a necessary tool in the every stage of research. The available information helps the researcher in his research and confirms the direction of his research. New information takes birth in the last step of research and it broader its scope. It is expressed in the better way in the contemporary system of a specific area of subject.

Even it is crystal clear that every research activity starts from the available information in that subject and the research is based on certain assumption. It takes start with that assumption, available information and end with the birth of new, more correct information. This process may give new height reliability to that particular subject area. Thus it could be said that there is a close relation between research and information.

1.8 Role of a librarian in research:  

In the early period the role of librarians was that of a gatekeeper of a library. Seetarama (2010) squash this view. According to him “librarian should act get-opener rather than get-keeper”. Today librarianship is a completely different task. S/He should play various roles like a teacher, a guide, a director and a manager too. In the research area one can play a key role by assisting in selection of topic, data collection, arrangement of references etc. Dharmraj Veer (2012) has prepared standard guidelines of research report writing for the research scholars of the university. This is an example of how a librarian can contribute in respective area. According to Veer (2012) a librarian can help researchers at the following stages,

i. How to select research topic or statement of problem?

ii. Which reference source is helpful for selection of research topic?

iii. Which bibliographic tool will be helpful for the research?

iv. Is there any thesis database ready reference?

With addition to it, researchers also need an assistance regarding, style of writing, citing of references and writing review of literature. Librarian could also provide the literature where national and international reviews are published in various full text theses databases and peer reviewed journals.
1.9 Users:

In library and information field, a number of terms are used to represent users, such as clients, customers, borrowers, members, etc. Some of these terms are used in particular contexts (e.g., borrowers) or borrowed from other areas of human Endeavour (e.g., customers). But the most frequently used terms in libraries is user. It specifies the context clearly and has a wide acceptability in the profession. It represents a person who uses the library for his information needs. But to define the terms library user is still not easy, as some persons may be frequent visitors of library, while some others may use the library once in many years. Some may use many of the services provided by the library, and others may use only one service. Some may visit the library while others may use the library services through messenger or telephone or other facilities. Still another category of persons may visit the library but not for using its collection or services, instead for paying personal visit to a staff member. Out of these many conditions, when we can call a person, a library user is sometimes difficult. According to Kenneth Whittaker, “a user may be defining as a person who uses one or more of a library’s premises personally; he may use telephone or other communication facility for this purpose.

1.9.1 Types of users:

Categories of users may include a specialist, a student, a housewife, an average layman, a businessman, or a teacher, etc. Moreover, the categories of uses will vary from library to library. According to Whittaker, for a general analysis, the users may be divided according to the kind of use they make or are likely to make of the library’s services. Five groups of users can be distinguished on this, basis general readers, subject readers, special readers and non-reading users; and one more as non-users. Dhiman and Yashodarani (2005) have categorized users as;

a. General readers: This group of users makes use of fiction and non-fiction collection of the library. The non-fiction collection may include documents from a variety of subject fields. This group may be further broken down into adult or mature general readers and the children. The adult general readers use libraries for a variety of purposes, but mainly for leisure needs, and they are mostly associated with public libraries. The children may also use public libraries in addition to their school
libraries. Children have both educational and leisure needs, which must be, provide for, and, being children, their needs must be addressed at level, which are appropriate for them.

b. **Subject readers**: These types of users concentrate their use of library materials on a subject field, which they are working in or are studying. This category can be further subdivided into students and subject specialists. Students are the main user category of academic library. The educational needs of this subgroup are considerable, but fairly easy to workout, being linked to the courses they are talking. The services required by the subject specialists are in a position best suited to cater to their requirements. There are several reasons for this, but basically it is because the typical special library is particularly geared to satisfying only the needs of the users this category.

c. **Special readers**: This group of readers has some special needs, which are the result of disabilities of one kind or another. In this context, physical and intellectual disabilities may be distinguished. The physically handicapped subgroup such as wheelchair users, have the ability intellectually to access library materials, but have difficulty physically in accessing them, unless special help and services are offered by the libraries. The intellectually disadvantaged include the educational subnormal and those who are illiterate or semi-literate for other reason. This subgroup too needs special services or materials to have its needs satisfied.

d. **Non-reading users**: This category of users can not be called as readers as they make no use of the reading materials offered by the library. In this category one subgroup makes the use of the library materials but not reading materials. A good example is of the users, who come into the library just to borrow videos. The other subgroup consists of those users who only make use of the library services, which are not connected with it’s stoke e.g. they may enter the library to listen to a library lecture or in order to view a look exhibition.

e. **Non-users**: Non-Users in the context of a library are the person entitles to use library services, but are not able to use them at present. They may be socially, culturally, economically, educationally, or even physically disadvantaged persons of the society or they may have a different life-style or inclination that does not match the
functioning of the library. Libraries make effort to eliminate the hurdles and make these non-users their regular users.

1.10 The Ph. D and academic research:

At the time graduation ceremonies at several universities in the US, after doctorate degrees have been conferred upon the candidates, the dean or Vice-chancellor of the university or the president adds a comment signifying the profession’s high calling, like: “Welcome to the ancient and universal company of scholars,” or “Welcome into the society of educated men and women.” The doctorate degree, commonly referred as Ph.D. (Philosophiae Doctor, or, D.Phil., Doctor of Philosophy), is the highest degree. Its Primary purpose is training professors and other researchers who would act as recipients and keepers of vast knowledge handed down from the past, creators of new knowledge through research, and disseminators of knowledge through teaching (2006). Former Cornell president Professor Frank Rhodes (2001) opined that “Doctoral education is one of the most important of all tasks of the university because it is the foundation for the nation’s research and development enterprise.” What is doctoral education? Ph.D. needs years of ceaseless studying and researching in minute detail some area of human knowledge and writing a dissertation based on the findings. The New Oxford Dictionary of English (1996) defines “research” as “the systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions.” Doctoral education is intimately connected with academic research, and generally it conducted in educational institutions. Free from encumbrances that may characterize research done in industry, government agencies, or think tanks, such as pressure to turn a profit, diktat to work on specific subjects or promote a certain ideology, and structure to meet deadlines, doctoral research is a unique privilege and an extraordinary pursuit. A key to creating wealth of a nation is applied research, which, in turn, traces back to academic research. Developed countries have powerhouse universities that developing countries try to facsimile.

Original thinkers are successfully promoted by the modern universities. More than 75% mathematicians and Nobel Laureate scientists received their Ph.D.s from various universities and subsequently working there. Most of them are involved in doctoral programs excellent programs run by the universities and reputed graduate
schools. Universities provide financial assistance and resources to carry out advanced research, provide a platform for cross pollination of ideas, and work as a lighthouse that light up and guides the nation.

1.11 Academic research in India:

If one wants to know the history of Indian academic research he must go back to 1784 when Sir William Jones established the society of Bengal in Kolkata for oriental studies. But the British authorities were interested to set the teaching institutes. Their main focus was on the field of applied sciences like archaeology, botany, geology, trigonometry, zoology etc. When Sir Ronald Ross won the Noble Prize for the research on life cycle of malarial parasites in 1902 it becomes the greatest academic recognition for India because the research was done in Indian premises, this incident boosts.

After the independence Indian education system expanded rapidly. Many institutes were set up with the aim of either to promote research or to provide standard higher education like IITs, IIMs and National institutes etc. as of Dec. 2013 there were 642 universities which support academic research activities in India. Several research councils promote the research work like Indian Council of Historical Research, Indian Council of Social Science research, Council of Architecture, Indian Council of Philosophical Research, Project of History of Indian Science, Philosophy and Culture and National Council of Rural Institute. Government has established various laboratories in several parts of the country such as National Chemical Laboratory Pune (HRD Ministry, 2013).

There are two approaches to doctoral studies in India: 1. The British influenced Ph.D. which is prevalent in many commonwealth universities where doctoral students start doing research from the beginning and 2. The American influenced Ph.D., which is gaining ground in Indian institutes. Where students take courses in general and special areas, pass appropriate qualifying examinations, and then start research and thesis writing. The first approach often leads to poorly trained Ph.D.s who studies on a part time basis while working full time in other jobs (Chatterji, and Moulik, 2006).

In the area of crop development, space program, research in nuclear science India achieved significant success after the independence. Today it’s a proud feel fact that
India became world’s largest academic and scientific community, it has a large number of research labs and educational institutions (Chatterji, and Moulik 2006).

1.12 Swami Ramanand Teerth Marathwada University at a glance:

Swami Ramanand Teerth Marathwada University was founded on 17th September 1994. Through state govt. notification; before that it was a sub-center of Marathwada University Aurangabad. The university is named after Swami Ramanand Teerth, the Doyen of the Hyderabad freedom struggle and also a renowned educationalist and social activist. The university is to cater for southern part of Marathwada region of Maharashtra state, especially districts of Nanded, Latur, Parbhani and Hingoli. It has following schools,

i. School of physical sciences;
ii. School of chemical sciences;
iii. School of earth sciences;
iv. School of life sciences;
v. School of M mathematical sciences;
vi. School of interdisciplinary studies;
vii. School of Pharmacy;
viii. Fine and Performing arts;
ix. School of commerce & management sciences;
x. School of social sciences;
xi. School of languages and literature;
xii. School of media studies.

A sub-center of the university is working at Latur. Schools in sub-center;

i. School of Management science;
ii. School of Social science;
iii. School of Technology;
iv. School of Language and Literature.

The university is one of the famous educational institute of Maharashtra for providing higher education, it is recognized by UGC under section 2 (F), 12(B) of UGC act. It offers various certificate, diploma, degree, post-degree courses through above mentioned in campus schools and off campus institutes, colleges.
Research programs in several subjects are offered in in-campus study centers and centers allotted to the affiliated colleges of the university (www.srtmun.ac.in).