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Research in Librarianship: An Uneasy Connection

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Abstract Restoring intellectual life, the unity that the forces of modern life are threatening to destroy constitutes one of the most significant task to which thoughtful men and women are addressing themselves today." In the modern world of research the cooperation of scholars and scientist from various branches of knowledge in the term attack upon problems of great complexity is one of the most distinctive and important features. The research process itself is as old as the history of man, and though the incessant striving for system in the solution of problem has evolved the scientific method as it is understood today, the recent introduction of team research represents organization for the purpose of reducing the uncertainty of outcome and minimizing the possibility of failure. Research continually growing awareness of the complex interrelationship within the world of knowledge and the interdependence of phenomena stands as tacit admission of the essential unity of the research process. Because the librarianship itself is concerned with all human knowledge, the use of interdisciplinary ream research for attack upon library problems is especially important and promising. Present chapter represents the historical and future perspective, professional associations and agencies engaged in Library science research as well as research methods which being used in Library and information science.

Keywords Research in Librarianship, Research in Information Science, Methodology in Library and Information Science

1. Introduction

Research is an intellectual process whereby a problem is perceived, divided into its constituent elements, and analyzed in the light of certain basic assumptions; valid and relevant data are collected; hypotheses (if any) are through objective testing, rejected, amended, or proved. The generalizable re-sults of this process qualify as principles, laws, or truths that contribute to man's understanding of himself, his works, or his environment.[1] Stated another way, research is the systematic attempt to discover new facts or sets of facts, or new relationships among facts, through the formulation of a preliminary explanation or hypothesis which is subjected to an appropriate investigation for validation or disproof and "The men (researcher) of experiment are like the ant; they only collect and use: the researchers resemble spiders, who make cobwebs out of their own substance. But the bee takes a middle course; it gathers its material from the flowers of the garden and of the field, but transforms and digests it by a power of its own." Clearly, to be an effective research investigator one must resemble the bee-purposeful, industrious, and imaginatively selective in the assembling of evidence.[2]

The only rule that governs research is the rule of objectivity. Research is the stern disciplinarian that it is, not because it is recondite or esoteric, but because it leaves no place for the subjective. Yet it is pursued by human beings who are themselves inescapable complexes of both reason and emotion and in research the latter must be sup-pressed if the former is to prevail. Reasoning or observation that is diluted with emotion becomes sophistry or dogma. We submit that these are particular threats to research in librarianship, for librarianship is dominantly a service, and a service is always in jeopardy from emotion. The librarian means to do well, and by indentation of self-sacrifice and hard work he does what he means to do, and therefore that which he does is good.[3]

2. History of Librarianship Research

It was **Ralph A, Beals** who categorized library literature into the tri-partite classification of Glad Tidings, Testimony, and Research, finding precious little of the last.[4] This poverty of research in librarianship was explained by C. C. Williamson, in an address delivered at Western Reserve University in 1930 and subsequently published as the opening essay of the first issue of the *Library Quarterly,* as a consequence of the fact that librarians are basically empiricists, untrained in research and the scientific method. There exists, he charged, a deep-rooted prejudice among library workers against subjecting their activities to scientific scrutiny."[5] This was undoubtedly the attitude of the typical librarian in 1930, and there is still much of it today. Research is emotionally disquieting, it does question old beliefs and sweeps aside tradition, often leaving in its wake disbelief,

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uncertainty, and shattered ideals.

Yet, despite the librarians' conventional antipathy for research, at the University of Chicago in the decade of the 1930's) some progress was made in laying a solid foundation for the application of research to the library as a social invention. Pierce Butler attempted to formulate the principles of a science of librarianship; **Carleton Joeckel** encouraged studies in the application of the techniques of scientific management and administration to the operation of libraries; William Randall focused the attention of his students upon the application of theories of the organization of knowledge to principles of library classification and bibliographic organization generally; **Douglas Waples** went beyond librarianship to the fundamental problem of the social effects of reading. And Dean Louis Round Wilson set forth, in *The Geography of Reading,* the social, cultural, economic, and other environmental influences related to the geographical distribution of libraries and library resources.

The advent of the Second World War exerted two powerful influences upon research in librarianship. First, it abruptly terminated the developments at Chicago by dispersing the faculty, and from this interruption the program initiated by Wilson and his colleagues never really recovered. Second, the War raised research in general to such a high level of prestige, and rewarded its practitioners with such rich endowments, that librarianship was forced into a form of activity which had been largely alien to the profession and for which librarians generally were certainly unprepared. To this pressure for re- search, librarians responded in a variety of ways, and most of them hastily devised and ill-considered. The library schools began to talk glibly of research and to establish courses and seminars in library re- search and research methods. They substituted for the fifth-year bachelor's degree the degree of Master of Science in Library Science, and they rushed all unawares into doctoral programs. Wanting desperately to "do research," they looked to such fund-granting agencies as the Federal government and the foundations, and the response to their applications was surprisingly generous. Dollar diplomacy came to librarianship, with research as the key by which the coffers of wealth were to be unlocked. One can scarcely blame the librarians-even a starving man will founder if his normal diet is not restored by degrees, and librarians had been hungry for a very long time.

Because research had for so long been foreign to librarianship, when librarians did take the plunge, they became over-enthusiastic converts to method. Librarians, as John Livingston Lowes once wrote of the humanists, tended to become enamored of the methods, and at times to forget the end; to allow, in a word, the fascination of the means to distract[them] from the very object for which they are employed." Because librarianship used as a model the methods of social science research, it relied so heavily upon statistics that, for a time, research in librarianship came to mean, almost inevitably, statistical investigation; and the value and significance of a research project came to depend upon the demonstrated degree of skill in statistical manipulation. Because the methods and techniques of librarianship itself had been empirically derived, it is not surprising that research in librarian- ship was also empirical at first, As a result, much library research has been little more than what Beals called "testimony," the implications of which are almost always personal and hence likely to be idiosyncratic. The evidence offered in support of testimony is experience, usually undifferentiated experience consisting of impressions and appraisals of complex phenomena.

While in some situations valid experience rightly interpreted can contribute to the research process, yet of much library research one cannot but wonder whether the process of winnowing the data has been carried far enough to yield wholly trustworthy results; whether the size and character of the sample are such that the results can be reliable; whether the reporters of the data were skilled analysts and observers; whether conditioning factors had been isolated and appraised with accuracy; whether central tendencies had been slighted in favor of the picturesque, the unusual, or the fortuitous; and finally, whether the conclusions reached would be respected by qualified authorities. To be sure, for the solution of many stubborn library problems, undifferentiated experience is the only source of information available to the investigator, but it requires careful scrutiny and judicious appraisal if it is not to be misleading. Because of the empirical character of library research, and its excessive dependence upon local observations and limited data, more frequently than not it is provincial and parochial rather than general in applicability.

3. Meaning of Research

There are numerous scholarly books and articles on scientific research and almost as many definitions. Scientists and philosophers or historians of science, are fascinated with the problem of defining what scientists do to establish new knowledge. **J. H. Shera's** classic essay on "Darwin, Bacon, and Research in Librarianship" written for an earlier issue of Library Trends*,* describes it by following way:

Shorn of its mysticism and its methodology, research since (at least) the time of **Bacon** has been an answering of questions by the accumulation and assimilation of facts which lead to the formulation of generalizations or universals that extend, correct, or verify knowledge described in terms of its sequential acts, "research is an intellectual process whereby a problem is perceived, divided into its constituent elements, and analyzed in the light of certain basic assumptions; valid and relevant data are collected; hypotheses (if any) are through objective testing rejected, amended, or proved"[6].

4. Objectives of Research

The purpose of research is to discover answers to the questions through the application of scientific procedures. The main aim of research is to find out the truth which is

hidden and which has not been discovered still. Though each research study has its own specific purpose we may think of research objectives as following broad grouping:

1. To gain familiarity with a phenomenon or to achieve new insights into it (studies with this object in view are termed as exploratory or formulate research studies);
2. To portray accurately the characteristics of a particular individual, situation or a group (studies with this object in view are known as descriptive research studies)
3. To determine the frequency with which something occur or with which it is associated with something else (studies with this object in view are known as diagnostic research study)
4. To test a hypothesis of a causal relationship between variables (such studies are known as hypothesis-testing research studies)

5. Motivitions in Research

What makes people to understand research? This is a question of fundamental importance. The possible motives for doing research may be either one or more of the following:

1. Describe to a research degree along with its consequential benefits;
2. Desire to face the challenge in solving the unsolved problems, e.g. concern over practical problems initiate research;
3. Desire to get intellectual joy of doing some creative work;
4. Desire to be of service to society;
5. Desire to get respectability.

6. Formulation of Research Problems

Formulation of a research problem: A persuasive problem statement consists of three parts: 1) the ideal, 2) the reality, and 3) the consequences for the reader of the feasibility report. Well constructed problem statements will convince spectators that the problem is real and worth having present investigates. research strategy is one of contrast: by situating the ideal scenario next to the situation as it exists, researcher can not only persuade the reader that a problem exists, but then go on to emphasize the consequences of ignoring or addressing the problem. Formulation of problem statement is the backbone of the research study and the feasibility report. By giving careful consideration to how should construct it for the study, it must use when doing your research and writing for the proposal as well as the progress and the feasibility research report. Following are five steps to formulate the Research Problem

1. Specify the Research Objectives

A clear statement of objectives will help you develop effective research.

It will help the decision makers evaluate your project. It's critical that you have manageable objectives. (Two or three clear goals will help to keep your research project focused and relevant.)

2. Review the Environment or Context of the Research Problem

As a marketing researcher, you must work closely with your team. This will help you determine whether the findings of your project will produce enough information to be worth the cost.

In order to do this, you have to identify the environmental variables that will affect the research project.

3. Explore the Nature of the Problem

Research problems range from simple to complex, depending on the number of variables and the nature of their relationship.

If you understand the nature of the problem as a researcher, you will be able to better develop a solution for the problem.

To help you understand all dimensions, you might want to consider focus groups of consumers, sales people, managers, or professionals to provide what is sometimes much needed insight.

4. Define the Variable Relationships

Marketing plans often focus on creating a sequence of behaviors that occur over time, as in the adoption of a new package design, or the introduction of a new product.

Such programs create a commitment to follow some behavioral pattern in the future.

Studying such a process involves:

Determining which variables affect the solution to the problem.

Determining the degree to which each variable can be controlled.

Determining the functional relationships between the variables and which variables are critical to the solution of the problem.

During the problem formulation stage, you will want to generate and consider as many courses of action and variable relationships as possible.

5. The Consequences of Alternative Courses of Action

There are always consequences to any course of action. Anticipating and communicating the possible outcomes of various courses of action is a primary responsibility in the research process.

7. Types of Research

The basic types of research are as follows:

1. *Descriptive vs. Analytical*: Descriptive research includes survey and fact finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs as it exists at present. In social science and business research we quite often use the term ***Ex post facto research*** for descriptive research studies. The main characteristics of this research are that the researcher has no

control over the variables; he can only report what has happened or what is happing. Most ***ex post facto*** research projects are used for descriptive studies in which the researcher seeks to measure such an items as, for example, frequency of shopping, preferences of people, or similar data. **Ex post studies** also include attempts by researchers to discover causes even when they cannot control the variables. The method of research utilized in descriptive research is survey method of all kinds, including comparative and correlative and correlation methods. In ***analytical research***, on the other hand, the researcher has to use facts of information already available, and analyze those to make a critical evaluation of the material.

2. ***Applied vs. Fundamental:*** research can either be applied (or action) research or fundamental (to basic or pure) research. ***Applied research*** aims at finding a solution for an immediate problem facing a society or an industrial/business organization, where as ***fundamental research*** is mainly concerned with generalizations and with the formulation of a theory. 'Gathering knowledge for knowledge's sake is termed 'pure' or 'basic' research. Research concerning some natural phenomenon or relating to relating to pure mathematics are example of fundamental research. Similarly, research studies, concerning human behavior carried on with a view to make generalizations about human behavior, are also example of ***fundamental research***. But in other hand, research aimed at certain conclusions facing a concrete social or business problem is an example of ***applied research.*** Research to identify social, economic or political trends that may affect a particular institution or the copy research (research to find out whether certain communications will be read and understood) or the marketing research or evaluating research are examples of ***applied research***. Thus, the central aim of applied research is to discover a solution for some pressing practical problems. Whereas ***basic research*** is directed towards finding information that has a broad base of applications and thus, adds to the already existing organized body of scientific knowledge.

3. ***Quantitative vs. qualitative research: quantitative research*** is based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in term of quantity. Qualitative research, on the other hand, is concerned with qualitative phenomena i.e. phenomena relating to or involving quality or kind. For instant, when we are interested in investigating the reasons for human behavior 9i.e. why people think or do certain things), we quite often talk of 'Motivation research' an important type of qualitative research. This type of research aim at discovering the underlying motives and desires, using the depth interviews for the purpose. Other techniques of such research are word association tests, sentences completion tests, story completion tests and similar other projective techniques. Attitude or opinion research i.e. research designed to find out how people feel or what they think about a particular subject or institution is also ***qualitative research***. Qualitative research is especially important in the behavioral sciences where the aim is to discover the underlying motives of human behavior. Through such research we can analyze the various factors which motivate people to behave in a particular manner or which make people like or dislike a particular thing. It may be stated, however, that to apply qualitative research in practice is relatively a difficult job and therefore, while doing such research, one should seek guidance from experimental psychologists.

4. ***Conceptual vs. Empirical Research:*** *conceptual research* is that related to some abstract ideas or theory. It is generally used by philosophers and thinkers to develop new concepts or to reinterpret existing one. On the other hand ***empirical research*** relies on experience or observation alone, often without due regard for system and theory. It is data based research, coming up with conclusions which are capable of being verified by observation or experiment. We can also call it as experimental type of research. In such a research it is necessary to get at facts firsthand, at their source, and activity to go about doing certain things to stimulate the production of desired information. In such research, the researcher must first provide himself with a working hypothesis or guess as to the problem results. He then works to get enough facts (data) to prove or disprove his hypothesis. He then set up experimental designs which he thinks will manipulate the person or the materials concerned so as to bring forth the desired information. Such research is thus characterized by the experimenters control over the variables under study and his deliberate manipulation of one of them to study its effects. ***Empirical research*** is appropriate when proof is sought that certain variables affect other variables in some ways. Evidences gathers through experiments or empirical studies is today concerned to be the most powerful support possible for a given hypothesis.

5. ***Some other types of research:*** All other types of research are variations of one or more of the above stated approaches based on either the purpose of research, or the time required to accomplish research, on the environment in which research is done, or on the basic of some other similar factors. From the point of view of time, we can think of research ***either as one time research or longitudinal research.*** In the former case research is confined to a single time- period, whereas in the latter case the research is carried on over several time periods. Research can be ***field-setting research or laboratory research or simulation research,*** depending upon the environment in which it is to be carried out. Research can as well be understood as ***clinical or diagnostic research.*** Such research follow case study methods or in depth approaches to reach the basic casual relations. Such study usually go deep into the causes of thing or events that interest us, using very small samples and very deep probing data gathering devices. The research may be ***exploratory*** or ***it may be formalized.*** The objectives of exploratory research is the developments of hypothesis rather than their testing, whereas ***formalized*** research studies are those with substantial structure and with specific hypothesis to be tested. ***Historical research*** is that which utilizes historical sources like documents, remains etc. to study events or ideas of the past, including the philosophy of

persons and groups at any remote point of time. Research can also be classified as ***conclusion oriented and decision oriented research*** while doing ***conclusion*** *oriented research*, a researcher is free to pick up the problem, redesign the enquiry as he proceeds and is prepared to conceptualize as he wishes. ***Design oriented*** research is always for the need of a design maker and the researcher in this case is not free to embark upon research according to his own inclination. ***Operation research*** is an example of ***design oriented research*** since it is a scientific method of providing executive departments with a quantitative basic for decisions regarding operations under their control.[7]

8. Research in Librarianship

Research in Librarianship briefly means the collection and analysis of original data on a problem of librarianship, done within the Library schools according to scientific and scholarly standards. Research in this connection broadly includes investigations; studies; surveys; academic works at the doctoral, post doctoral, and research staff level; and in action research by practicing librarians; information personnel's; and documentalists.

Importance of Research in Librarianship: The importance for research in Librarianship mainly from following reasons; the *first reason* is the educational function of advanced study in librarianship. The main purpose of advanced trained is to train that, to impart to the student a body of knowledge and of techniques about the subject to which they had been insufficiently exposed during the earlier stage of professional training, or not exposed at all. This types of advanced training leads to fruitful specialization in the area of academic librarianship, special librarianship, public Libraries, library administration, bibliography documentation and information etc. the *second reason* involves the critical function, critical approach to librarianship. The profession requires students who can criticize, add to, and improve the professional knowledge and expertise. An importance function of research is to be critical. All the techniques, processes, and the practices of librarianship which are taken for granted in the beginning courses should be put to critical examination. Such a critical study enables the student to achieve and develop skills in them. The knowledge developed in the profession through surveys conducted by the faculty could be put to use, and basic research on the problems of librarianship be undertaken. These serve the critical function not for the sake of criticism, but for the improvement of professional practice. The *third reason* is the symbolic function. This is a result of growing professionalism in library and information science. Since 1930s, proliferation of library profession is under way and profession began to see greater vistas of service opening before it. Advanced training and research leading to doctorates just like in other professions) were recognized as prerequisites of library profession to be treated at par with other professions. Starting with 'library economy' 1876 we are now in an information age, where we deal with computers, online services, and complexities of information technology. All these developments in information technology have their effect on library and information science. To cope up with this ever – increasing multi-dimensional knowledge, we have to keep ourselves ready and this necessitates research in our own subject field library and information science.

9. Research Methods in Library Information Science

1. Historical Method: we understand our present environment, and then history is essential. History is a written methodological record of its development and it helps to explain the present in this way. History of library and information science is continues methodological recounting of the past events pertaining to the establishment, maintenance and utilization of systematically arranged collection of recorded information. Hence historical method is adopted in the research of this discipline it will be foundation for improvement on the basic of the past study. It can also help to find out various shortcomings in this field on the basic of the past.

2. Survey Method: A survey is a systematic collection of data concerning a system, its activities, operations, persons involved in the system. Thus the library survey is defined as a systematic collection of data concerning a library its activities, operations, personnel's working in the library and its users. This purpose is to make a specialized type of investigation to improve library services. Thus library surveys are conducted either to assess an existing situation or to check library system or to evaluate the area of librarianship in order to removing shortcomings.

3. Case Study method: case study method is a technique in which an institution is recognized as a unit of study and various aspects to the unit are studied deeply. In this method, emphasis is on principles and processes rather than the transfer of factual information. It represents the real situation drawn from practice and provides an opportunity to enquire skills in analyzing problems, making decision and solving them. This method can be used in library management system analysis, cost benefit analysis, cost effectiveness, library effectiveness, and Library effectiveness and computer applications in Libraries.

4. Delphi Method: Delphi method is basically a technique of obtaining consensus among experts opinion on a given problem. A questionnaire is prepared translating the aims and objectives of research. The defined problem is put up to the panel of experts in many rounds till a consensus agreement is achieved. The basic theory behind this technique is that consensus opinion among majority of opinions will have greater credibility and authority than then the surmise of only the most articulate/spokes persons is a group of participating respondents. In the formulation of library legislation, policies making for libraries, curriculum

design, method of teaching and education, process of decision making and in manpower planning this method can be used.

5. Statistical Method: statistical method is being used for aggregative analysis and intensive study of individual unit is outside its scope. This method is based upon quantitative analysis. By using this method the researcher can study the problem related to libraries such as Budget estimates, Library planning, Assessment of Library services, Evaluation of Library services and Library forecasting studies.

BIBLIOMETRICS

Research in bibliometrics has also given birth to a couple of other term, viz., Scientometrics and Informetrics, which are used today in place of bibliometrics. Earlier the term Statistical Bibliography was also used for it, while Ranganathan prefer to call it Librametry. All these term are the same. Bibliometric is a technique or a tool of information management, which is also called Quantitative research/science. In the field of Library and information science bibliometrics as it is presently known is of recent origin, though its roots could be traced to a study made 85 years ago in 1917. Since then it has come a long way and attained much importance and significance for library and information managers. Bibliometrics has practice applications in the evaluation of library operations and survey through statistical techniques to make the quantitative analysis possible. It is also useful in the study and measurement of publication patterns of different forms of literature on the subject or the other. Bibliometrics has divided into the two parts e.g. descriptive bibliometric (productivity count) and evaluative bibliometric (literature uses count). The techniques of bibliometrics have extensive application equally in sociological studies of science, information management, librarianship, history of science including policy, study of science and scientists, etc.

Area of application of Bibliometrics: to study research trend and growth of knowledge; to estimate comprehensiveness of secondary periodicals; to identify users of different subjects; to identify authorship trend in documents on various subjects, to measure the usefulness of retrospective and current awareness services; to identify past, present publishing trends as well as forecast future publishing trends; to development experimental models. To identify core periodicals in different disciplines through application of Bradford's law of scattering and citation analysis; to formulate stacking and weeding policies; to initiate effective multilevel network system; to formulate collection development/management policy; to study obsolescence and dispersion of scientific literature; to study productivity of institutions, individuals and disciplines; to design automated language processing for auto indexing, auto classification and auto abstracting; and to develop norm for standardization.

10. Professional Ogranizations, Agencies and Library Research

Library practitioners have not always been enthusiastic about research, the current structure and programs of professional organizations in the field shows some evidence. That research is considered important in 1984. The American Library Association (ALA), the Special Library Association, the Medical Library Association and the American Society for Information Science all have committees concerned with research. Within the American Library Association, the largest of these organizations, many of the eleven divisions mention responsibility for research in their constitution and bylaws and many also have research committees serving either the division as a whole or one of its sections.[42] Several ALA divisions have columns about research in the division's journal or newsletter. ALA has appointed a Committee on Research and also has a member-ship unit exclusively concerned with research, the Library Research Round Table (LRRT), and a unit which has research as a major interest, the Library History Round Table.

Annual conferences of the library organizations frequently feature research. At ALA's annual conferences, for example, LRRT tradition- ally sponsors a series of "research forums" where research results can be presented formally. LRRT's information exchange suite provides a place for less formal discussion of research as do poster sessions sponsored by the general conference planning committee.[43] The American Association of School Librarians has sponsored its own research forum since 1974 and an annual research forum is often sponsored jointly by the Association for Library Services to Children and the Young Adult Services Division. All of these forums plus programs sponsored by other divisions for presentation of the results of research relevant to the division's interests are included in a list of "Meetings Related to Research" prepared and distributed annually by the ALA's Office for Research and the Library Research Round Table.

Despite the membership interest in research just described, ALA's ambivalent attitude toward the role of research in the association is evident in the history of the association's Office for Research (OFR). Established in 1972 following a recommendation of the "Policy Statement of the Role of Research in the American Library Association" adopted by the ALA Executive Board in 1970,44 OFR had a diffuse charge which included such phrases as "serves as a focal point for the many research interests ...within ALA" and "translates unmet needs into active programs."45 Closing OFR has been recommended by the Committee on Program Evaluation and Support (COPES) or the Executive Director at least three times since it was established. Budgetary constraints were the motivating factors. Because the Committee on Research sensed confusion among ALA leaders about OFR's mission and nature, the Committee on

Research drafted a new and much more practical charge to the office which was approved in January 1984 by the ALA Executive Board.

Agencies Conducting Research on Libraries and Information Services

In another part of this issue, Thomas Childers describes the role of schools of library and information science in conducting research. But this work is also done in many other places. Guy Garrison provided a systematic analysis of research on public libraries conducted in the 1970s for a presentation to LRRT which was later published in *Public Libraries.* Garrison was interested in the "demographics" of the research which led him to explore such questions as "who did the work" and "where it was done."47 Unfortunately, this has not been done for other areas of research in library service. Clues are available, however, in two annual sources-the *ALA Yearbook* and the *Bowker Annual of Library and Book Trade Information.* Since 1976, an article on "Research" has been included in the *ALA Yearbook.* Written by a different expert each year, the article regularly includes tables showing grants for research made by the Department of Education, the National Library of Medicine, and the National Science Foundation. Usually tables are arranged by name of the institution conducting the award and include the name of the principle investigator, the topic and the amount awarded.

Since 1980, Mary Jo Lynch has written an article for the *Bowker Annual* on "Research on Libraries and Librarianship" covering work done in the previous year. Examination of these two sources reveals that research in the field is conducted by at least four different agencies in addition to schools of library and information science: **(1)** other university departments or schools worldwide. **(2)** Libraries of various types, **(3)** nonprofit organizations, and **(4)** commercial research firms.

The commercial firm which does much of the work in this field, King Research, Inc., was covered by a feature article in the September 1980 issue of *American Libraries.48* Except for that article, there is little commentary in library literature about the various agencies conducting research in the field. There are probably two reasons for this: the volume of activity is not great enough to generate comment, and librarians in general are not very interested in where or how research is done.

11. Interdisciplinary Area of Library Research

The manifold multi faceted implications of industrialization for India typically spell out the need for scientific social research on a fairly large scale. To provide for a scientific understanding of nature of problems, sound diagnosis and an effective treatment-plan. In fact, the complexity of the situation (of which title is known) calls for some kind of an inter-disciplinary collaboration among researchers from specialized disciplines-economists, political scientists, sociologists, psychologists and anthropologists, etc. making for an effective multi-pronged attack on these social maladies.

Information is Interdisciplinarity: Information has how become Interdisciplinarity in nature. The old division of knowledge into separate discipline has virtually broken down. Each discipline is now interacting with other disciplines and in the process. New disciplinary information is generated. J.H Shera stated that "today there are unmistakable indications that all higher education is moving away from a vertical toward a horizontal dimension that transcends traditional disciplinary boundaries to seek a universal function common to all curricula.

Topology of Interdisciplinarity: Heinz Heckhausen identified the following six types of Interdisciplinarity among subjects; **1) Indiscriminate Interdisciplinarity:** All "encyclopedic endeavors" end up with "curricular mix-ups". Librarianship is a typical example of an encyclopedic Endeavour. **2) Pseudo-Interdisciplinarity:** disciplines using the same analytical tools are at times considerate to produce Interdisciplinarity fields. This association represents 'phase relation' among disciplines. The so called Interdisciplinarity expected on the basic of analytical tools being common is pseudo-Interdisciplinarity because there is on integration between the tool discipline and the host disciplines. **3) Auxiliary Interdisciplinarity:** this type of Interdisciplinarity results from cross disciplinary use of methods, one discipline being constantly dependent upon the method of another auxiliary discipline. Use of Boolean logic in the retrieval process is an example of auxiliary Interdisciplinarity. Here library and information science depending on Boolean logic and thus logic is regarded is an auxiliary discipline. **4) Composite Interdisciplinarity:** here diverse disciplines are brought together as problem solving techniques. The respective materials fields do not overlap, yet present a composition. In Ranganathen's terminology these are described as "clustered" subjects. **5) Supplementary Interdisciplinarity:** this type of inter disciplinary exists between disciplines in the same material field. Their respective subjects' matters partially overlap. Communications is an example of this type of Interdisciplinarity. Ranganathan called these subjects as "Compound" subjects. **6) Unifying Interdisciplinarity:** when two or more disciplines move towards their unification at their theoretical integration level, a unifying Interdisciplinarity results. These are the "fused subjects."

Inter-disciplinary research is a common feature of today. Rather, it is the need of the day. Inter-disciplinary research brings out a number of view disciplines by way of lamination, loose-assemblage, agglomeration and fusion.

One can identify a number of areas in which library research could profitably seek assistance from other branches of intellectual activity:

- Library administration: political science, government, management theory, operations, research, systems

analysis, personnel management, budgeting.

- Knowledge and society: epistemology, cultural anthropology, social psychology, communication research, social organization, philosophy, library criticism.
- Education and communication: the structure and operation of the brain, psychology, the assimilation and utilization of information, linguistics, the new media, educational theory, communication theory.
- Man-machine relationships: automation, cybernetics, information science and systems, logic, theory of classification, scientific method, structural linguistics.

The areas here designated are intended to be no more than suggestive; certainly they are not definitive. They may, however, serve to indicate the opportunity for enrichment of research in librarianship through synthesis with other disciplines, some of which are themselves quite new and as yet not fully formalized. One should also point out that in certain areas (e.g. the neuro-physiological); the librarian can do little but evaluate the findings of others in terms of their relevance to his professional responsibilities.

12. Future of Library Research

What would be the future for research in librarianship? Because libraries will disappear, as newer ways to communicate information supplant the recorded forms in use today. It seems more likely, however, that librarianship will continue its transformation into whatever name is given to the field for professionals who mediate between information in any form and the people who need to use it.

Because the environment out of which those needs will arise is becoming more and more complex and the forms of conveying information are becoming more diverse, it seems evident that librarianship, by whatever name it is called, will need the understanding of information and its uses which scientific research can provide. Fortunately, there is a growing body of people concerned with libraries and information services that are educated to understand research and trained to conduct it. Fortunately, also, there is a growing appreciation among practitioners of the value of research. In the short term, none of what we have today is enough and leaders of the research community complain that improvements must be made. In the long term, however, the field is far advanced from where we were fifty years ago when the Graduate Library School was struggling to be born at the University of Chicago.

The November 1980 issue of the *Journal* of *the American Society* for *Information Science* featured Laurence Heilprin's article on "The Library Community at a Technological and Philosophical Crossroads: Necessary and Sufficient Conditions for Survival." Heilprin explained the two conditions for survival as follows: "In order to attain control over its own destiny the library community must keep its own members up to date educationally; and beyond this must perform the research that alone creates and keeps leadership in its field.**[8]** Heilprin believes that unless appropriate and sufficient research is conducted, the library community will not be able to transform itself but will be absorbed by other groups that will take over the information function for society. The challenge is clear: the connection between research and librarianship must be changed from one that is uneasy to one that is firm. Thus, Librarians need to pay careful attention to several factors: to the numerous meanings of the word research and the different ways each kind of research affects librarian- ship; to educational programs that develop an ability to understand and conduct scientific research; to publications and programming that discuss work in progress and disseminate final results; to increasing the availability of funding; and, finally, to the incorporation of a research perspective into the way librarians think about what they do.

13. Conclusions

A profession that would know itself-that would anticipates or must support and engage in productive research. Research is too important to be left to dilettantes and amateur, and its pursuit should be reserved for those who are qualified for it by aptitude, education, and motivation.

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