Library Research and its Allied Applications –
The Challenge of Advanced Research Techniques

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ABSTRACT

Library Research is often overlooked, even as an important branch of Applied Research and as a science which application has long assumed a horizon that is unbounded. Interest in Library sciences and research becomes important to the researcher, only when he needs the proficiency of a librarian to extract the information contained in sources. This paper proposes that ideas in Library Research which are both fundamental and operational in formulating and building research from hypothesis through to translating verbal description of decision - problem into statistical models be accorded some focus. A clear line of demarcation can be drawn between allied researches from the subject materials provided through Library research, and with innovations provided through advancements in modern research techniques, grounding in library research assumes a more critical position in scholarship research across disciplines. It is the foregoing that is the concern of the burgeoning study.

Keywords: Library, Applications, Research, Statistical models, Scholarship and Studies

1. INTRODUCTION

The increasing diversity of research approaches has engendered pressing needs that virtually every branch of any worthwhile field of study strives to meet. It could be in terms of factual knowledge reflecting the changing approach to the subject at large as the present conscious and deliberate attempt towards a multidisciplinary paradigm; or a proposed logical investigation that could present a more qualitative approach to the problem of the study. For instance, geomorphology, population studies as an aspect of human geography; enjoys intense research interest in the field of arts, social sciences and humanities among others, drawing from library research. This is in the effort, as it were, to make accurate assessment of particular areas of the problems with data and conclusions in sound qualitative terms.

Knowledge of library research and its approaches comes into this picture to meet the needs of organizing the inchoate mass of data that poses challenges to the researcher; thus, providing basic grounding in all branches of knowledge. The library houses physical materials that are categorized by a numbering system and digital materials are easily searchable on library computers.

Finding the correct information in a library can be a daunting task given the share number of resources. It is understandable then that research preoccupation in academics is driven by the prominence given to data gathering. (White and Tedds, 2000). In the United Kingdom, institutions' resource data is handled with great care. Research data demands a sophisticated approach because the academic sector particularly exploits research. Trochim (2014) notes that the joint Information Services Commission (JISC) is under pressure to meet the guidelines on storage and dissemination of academic works.

Research in the social sciences including LIS research was developed by borrowing methods from the natural sciences, including scientific methods which are built on certain beliefs about the nature of reality. This belief is based on the epistemology of positivism, view of the world that science holds the way to get the truth, to understand the world well enough so that we might predict and control it. (Farr ante, and Keyes, 2010.) Innovative technological research development has impact on the library system, which potentials continue to increase as evidence of knowledge based skills. Since the research environment configures the library and researchers inhabit knowledge shared, it is the contention here that procedures that guide researchers in creating questions to investigate, in generating evidence and drawing conclusions as pointed by Singer and Johnson(2008), should be the goal to answer the question, " What are the fundamental ideas of library research?"

1.1 Objectives of the Study
The main objective of the study was to consider how to utilize library and science research methods in exploring available materials to solve academic problems. Also specifically;
1. To examine long held challenges about control of data;
2. Sensitize researchers on information generation;
3. Identify new skills that promotes academic research

2. THEORETICAL IMPERATIVES

Learning theories present principles upon which educators and scholars in the domain of research hinge their studies. When the theories are looked at critically, the ways human learning is made effective and efficient concerns research. Learning is not acquired spontaneously but formed through experiences of exploring different aspects of the environment. The ability to discriminate a number of situations with various characteristics is what helps the individual to proffer solutions, which is exactly the aim of library research. According to Gagne,(1977), in his classification of Perceptual -Motor effective and Cognitive Learning Theory, which has been considered adequate to house this study, that describes physical skills as:

> skills which involve the hands, feet, eyes, or body that aids or involves perception and action. For example, a boy who rides a bicycle is learning through perceptual –motor way. In other words, he perceives and also performs an action. There is affective learning, which involves emotion or feeling in the process- thinking, problem solving occurs or takes place. (Swan,2008)

The import of the foregoing is that there is a process - the learner or the one who searches for data in a particular area of a study is affected by several factors: the materials, deadline, the environment in which the research/learning takes place and so on, including his likes and dislikes.(Peretomode, 1993). The researcher orderly approaches the subjects, proceeds with gathering data, formulating and testing hypotheses and proposing theories from data gathered in as many different subjects as possible: geology, chemistry, psychology, biology, sociology and so and so forth.(White and Tedds,2011).

2.1 Library Research: a Conceptual View

The Cambridge Dictionary defines research as a "detailed study of a subject in order to discover information or achieve a new understanding." A concise definition of research in Library and information Service (LIS) is difficult to capture given the broad scope of the field. But there is however, an understanding that aside from solving professional problems and developing tools, methods of analysis and a body of theory on which a study is to be realized, there is, in essence, a sense of realization that one needs some data to answer the question. According to Ohaja (2003,p.23),

> library research involves the use of secondary data, i.e., data previously gathered by other researchers, relevant information through consultation of books, journals, newspapers and other records of information or publications.

It finds its relevance where the culture of keeping accurate record is not there at all as is the case in Nigeria's general data situation where government is unable to provide accurate data. Can one vouch for disaggregated data on people's age, sex, or marital status? With fuller understanding gained through library research, it is possible to go to the drawing board to detail what the researcher wants to study and how. Provided with all the possible array of published and unpublished materials on the subject, the researcher is able to define the goal he has set for the study bearing in mind how to go about existing gaps in the literature, to amplify or replicate what has been done already. In essence therefore, it is the goal of library research to locate a study in the context of a particular study from which the work is drawn and to identify the theoretical foundation that under-girds it.

3. NATURE AND ROLE OF LIBRARY RESEARCH

Library research as discussed so far is a critical inquiry, a strenuous activity of sifting and analyzing information and presenting new knowledge. It is a logical affair that starts with a problem and the solution to the problem is expected to be logically arrived at. (Ogunji and Ogba,2013). The ways to search for these materials are many. If you know where to look, it is great, but frustrating if you don't. You can simply ask a librarian to help out, or you go to the library computers which are linked to the library database for relevant materials which may be what you are looking for. To jump right in and start searching is time consuming.

Libraries provide the physical materials e.g. books, manuscripts, CDs that are categorized by a series of numbers and letters. The main system of classification is the Dewey decimal classification, the Library of Congress, and the Colon classification. Most public libraries use the Dewey Classification. All of the systems work in essentially the same way. Each piece of material is assigned a number that relates to a hierarchical structure. The first number is the broad subject,(e.g. 300 in Economics), the following numbers correspond to the subcategory (e.g.,94 is European economy) and so on. As data archives, storage of data is guaranteed. It also provides opportunity for researchers to evaluate otherwise unavailable data. Some of these materials are by subscription, like the e-books which requires the use of library computers. Using the library wifi may equally do. An e-book is a book composed or converted to digital format for display on a computer screen. E-books are made readable through software applications used on computer systems such as the Adobe Reader. (Asemah 2014) An e-book can be offered indefinitely without going out of print. In terms of the space that a comparatively sized book can take up, e-book has advantage of space. An e-book collection takes up little room and space. Sambe (2008, p.71) observes that:

> education is a salient issue which library research undertakes and this role cannot be overemphasized, as the rapid growth of technology, its expansion in various forms of communication have opened up new horizons and multiplied the connections between diverse platforms of information and learning environments.

3.1 The Library and Research Data Management

Several factors have impacted on academic library services, including research. The evolving shape of pedagogy in higher education is one. This has impacted on academic library management to the extent that the traditionally silent study areas are now being replaced by places ideal for social or group learning.

Secondly, with the surge in information, there has been growing concern that digital services may lead to the extinction of the library. Since the increase of scholarly output that characterized the early days of computing technologies has thinned out, it was expected that academic libraries would take up more responsibilities especially in the area of research data management and this has not materialized. Again, coupled with the above, many higher education library services are suffering from low funding and the resultant pressure is on service delivery especially subscriptions to periodicals. All these have impact on salient approaches and institutional changes that could have taken place in the library system. We could go on and on to explore the challenges and opportunities in more detail, suffice to note that these are key reasons for the change in the shape of academic libraries.

3.3 Digital Resources and the Library

With the advent of the computer and the internet, research is conducted with relative ease. Digital resources are greatly expanding the walls of libraries. Databases in particular are available for all kinds of research in searching for information by topic, category, date, or other useful traits. Databases may specialize in certain fields such as medicine, business administration, mass communication, agriculture or engineering. These databases if subscribed provide access to all kinds of information that is not easily found through search engines like Google. Librarians can help to determine the best resources to use as well as introduce the researcher to any technology or software that might be useful. They have books, maps, manuscripts and periodicals which are given free of charge. Librarians are knowledgeable about what information is accessible from each source, hence can make your research effort more efficient.

The seamless information architecture and knowledge organization structures that facilitate easy access and retrieval from online sources as well as other digital developments have increased the opportunities of creating new roles for library research. Also with the use of mobile phones, iPads, kindles and other mobile devices that guarantee instant solvability of information problems, it is now much easy to gather information for immediate use at any time. (Clark and Hawkins, 2010). Lastly, with Web 2.0, awareness of services have increased thereby overcoming barriers associated with traditional methods of publishing, like delays associated with posting information on the website of other organizations which are controlled by IT departments. Makerspace is also a general term for people who get together to do things. They might focus on electronics, robotics, woodworking, sewing, or programming a combination of skills. Sharing ideas with other professionals and colleagues who work in different contexts has expanded the scope of library research.

4. POSSIBLE APPLICATION OF LIBRARY APPROACH/ TECHNIQUES IN MASS COMMUNICATION

According to Ohaja(2003, p.2.), research in mass communication delves into issues regarding various aspects of the discipline – print journalism, broadcast journalism, advertising and public relations, film production, books, newspaper and magazine publishing, law / ethics, theory and approaches to research. One way of classifying a research especially in all the aforementioned areas concerns the novelty, or otherwise of the investigation. For the researcher to proffer solution to a problem he has identified, he must lend himself to the study of the various characteristics that underpins the investigation.

The ability to discriminate the situations is quite important. Building on the framework provided helps for a more encompassing and deeper understanding of the research. Incidentally, many students don't like pioneering investigation because of the far-reaching nature of the probe, which they lack the resilience needed to break the ice involved. For example, if an investigator wants to embark on a lone probe of the impact of social media on voter behaviour among students, as the number hooked to the Internet increases a whole range of Internet services would be uploaded with various data on voting age, demographic characteristics, voter apathy and so on. Sources on demography will provide information on schools, grade, and population of students which apparently refers to all possible set of items defined by some characteristics.

However, if the study is a replicative one, it would require re-conducting a study at a later date and perhaps at a different locale from the original work. The later researcher would follow the pattern used for the earlier study to see if the same finding would be arrived at. A student studying how the newspaper covered ipob and the Nigerian Army impasse during the "Operation Python Dance" would take a cue from similar study like the "Operation crocodile smile" or the Zaki'ibam crisis to find out if there is any similarity in the mode of operation of the military actions. His findings will not only illuminate the inquiry and ultimately result, but also enrich the literature. With a further understanding gained through library research, the student can go on to prepare his research questions that will guide him in undertaking the probe, e.g., "How effective was the media coverage of operation python dance? Did the media give support to any group or they were neutral? Which aspect of the report was accorded more emphasis; and what was the motive behind the invasion?

Next is the research design and population of the study. Alika (2008) aver that an animal breeder studying the genetic variability of a particular trait within a population of a determined number of swine would depend on certain sources to draw his conclusions. Thereafter content analysis would be carried out on the ipob/NA issue in line with objectives and research questions posed as suggested earlier. The research question requires investigation from many different perspectives before any significance can be attributed to the result of the study. The descriptive statistics such as percentages, means, modes and median are appropriate for content analysis. Common inferential statistics (results are generalized to the population) are acceptable. However if the data meet the requirements of interval or ratio levels, a t-test, ANOVA, Pearson's r may be appropriate. Content analysis is a popular technique in mass communication research. Many of the steps involved in library and survey research are also found in content analysis; in particular, sampling procedures need to be objective and detailed, coders must be careful objective and detailed. Interpreting a content analysis requires that coders must be trained, requires more caution.
As predicted by Dominick and Wimmer(1987,p.18) that " the computer will become an integral part of content analysis in future, " that prediction is now a reality.

5. SUMMARY

The study can be summed up that: there are several challenges in library research approaches today coming from changes in the research system and the school system, especially the way learning is achieved and teaching is provided. The old functions that lend support and facilitate learning are now served in new ways. More emphasis is now put on research groups and this has made library research a global gateway. There is a new form which is interdisciplinary research that works in groups or teams and this places new demand on information. But merely reading newspapers in an e-library does not make one notice the essentials of library research.

6. CONCLUSION

This study has revealed quite vividly the importance of library research in scholarship ability to localizing a study in the context of the particular field from which a topic is derived. As a basic that under-girds any research effort, library materials are needed to obviate the difficulties associated with normal research endeavours. By poignantly drawing attention to the need for reviewing previous empirical studies, the study has brought into focus the essence of Library Research. Web publishing encompassing a variety of materials which includes e-book is becoming more popular and accessible. The study has discovered that while the younger generation are learning the ways of the e-book quicker, the members of the older generation would rather stick to printed books.   The study makes a case for investigators especially those in mass communication, who wants to embark on content analysis studies to use the library approach.

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