CHAPTER 3

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3.0 INTRODUCTION

The frustrating performances of the users study researches over last five decades have made the library administrators and managers realize that much of the data they collect relates to inputs and outputs. It does not provide information about the degree to which the library is achieving desired results (Jurow, 1993). This problem has led to increased efforts to find more meaningful methods. The most suitable answer to which is qualitative methodologies.

To fulfill the defined objectives, this research was conducted within the qualitative paradigm, as well as, within the conventional quantitative paradigm to determine the users' understanding and perception about the OPAC of the library of which they are the users. We have adopted two diagonally opposite kind of methods, namely 'Verbal Protocol' and 'Questionnaire Method' for this research.

3.1 OBJECTIVES

The major objectives of the present study is mainly as follows:

a. to assess the usability of qualitative research methods in OPAC use studies,
b. to ascertain that qualitative methods provide better tools to assess the performances of libraries through user studies, than quantitative ones,
c. to ascertain the suitability of Verbal Protocol method, which facilitates to interpret and analyses the needs of the users from the subjects' perspective.

3.2 HYPOTHESES

For the purpose of this study, two types of research methods have been used. The first is a qualitative method, namely, Verbal Protocol Method. The second was a conventional quantitative method. A brief questionnaire was circulated amongst the participant of the verbal protocol method. The assumption is that qualitative methods help the librarians better to determine the users' understanding and perception about the online catalogue. Keeping in view the above assumptions main hypotheses to be tested are as follows:

\[ H_0 : \text{Conditions remaining the same, both qualitative and quantitative methods provide equally efficient tools to analyses and interpret the need of the users.} \]

\[ H_1 : \text{Conditions remaining the same, qualitative methods provide efficient tools to analyses and interpret the need of the users as compared to quantitative methods.} \]

\[ H_2 : \text{Conditions remaining the same, quantitative methods provide efficient tools to analyses and interpret the need of the users as compared to qualitative methods.} \]
3.3 THE RESEARCH SITE

The British Council Library, Kolkata, was selected for the purpose of this study. The Library has implemented the Online Catalogue system, about three years back, with the help of an Indian library software, known as LibSys, a product of LIBSYS Corporation, New Delhi.

There were few steps necessary to gain entry to the research setting. For this study, the first step was to apply for research permission to The British Council Library, Kolkata (Appendix I). The initial approval was received on October 20, 2001 (Appendix II) by e-mail. The final approval from the Library side was received on October 23, 2001 (Appendix III). The study was conducted on all working days of the Library, from November 16, 2001 to November 30, 2001.

3.3.1 The British Council Library, Kolkata

The Library maintains a substantial collection of books, periodicals and other non-book materials. A small statistical details of the Library collection, membership and issue / return transactions are given below:

Table 3.1 Statistical Details of The British Council Library, Kolkata (as on October, 2001)

<table>
<thead>
<tr>
<th>Collection</th>
<th>Membership</th>
<th>Monthly average transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Books</td>
<td>31751 Individual</td>
<td>4348 Books 18832</td>
</tr>
<tr>
<td>Periodicals</td>
<td>87 (British)</td>
<td>176 Periodicals 1663</td>
</tr>
<tr>
<td>Back Set Periodicals</td>
<td>1 to 2 years</td>
<td>242 Back Set Periodicals Not issue able</td>
</tr>
<tr>
<td>Educational Video Tapes</td>
<td>448 Home Video</td>
<td>12 Educational Video Tapes 68</td>
</tr>
<tr>
<td>Home Video Tapes</td>
<td>2370 Reference</td>
<td>192 Home Video Tapes 985</td>
</tr>
</tbody>
</table>
The Library uses the LibSys software version 4.0 on SCOUNIX and hosted on DELPOWER EDGE 2300 server. It has four dummy OPAC terminals and the terminals are connected through a Local Area Network. The following two are photographs of the OPAC terminals. The different options and interface screens of LibSys OPAC, have been shown in Appendix-IV.

![Photo 3.1 - OPAC terminal](image1)

![Photo 3.2 - OPAC terminal](image2)

### 3.4 SAMPLE

The users of the online catalogue station were asked if they would participate in the study. An attempt was made to minimize bias in the sample by selecting times to approach potential participants in advance, numbering the online catalogue terminals and selecting the order of online catalogue stations at which to approach people on a rotation basis. Total 32 users were approached during the period of the study, of which 18 participants had accepted the proposal. The sample size for the purpose of
the study was found satisfactory, as Virzi (1992) has suggested that approximately a sample size of fifteen is enough for this purpose. Using the Verbal Protocol method, Shaw (1995) conducted study with a sample size of ten graduate students. Branch (2001) has also performed the study with a sample size of twelve participants.

3.5 THE METHOD FOR QUALITATIVE RESEARCH

Originally developed as a research tool in the field of cognitive psychology, the verbal protocol method was initially used as a means of studying human problem-solving processes. The cognitive approach, as observed by Wilson (1984), "draws attention to the need for a bridge between the meanings of everyday life and the information that may have relevance for everyday life".

While discussing about the research methods of Project INISSL, Wilson (1981a), one of early researchers in Library and Information Science who have used qualitative research methods, has proposed that there are a number of advantages in combining quantitative and qualitative modes of analysis and reporting. The same proposition has reflected in one of his latest publications, where some degree of integration of different models was proposed. Wilson (1999) has proposed a problem-solving model as a way of integrating the research in the field, where 'person-in-context' and 'Context of information need' treated as basic mainstay of the model of information behaviour. It is noticeable that the qualitative research
methods emphasizes on the CONTEXT, most to understand the complex and interactive environment in which a user search, locate and collect information.

The increasing appreciation for and acceptance of qualitative research methods in the domain of social sciences was observed by Shaw (1995). She has also observed that these methods "are being touted for computer-based system design as well". While using the Think Aloud method, Shaw pointed out that the method helped to provide in-depth information about each participant user and "rich sense of the nature of searching and the context and evolution of information need".

This study was designed to understand the perception and problems of the library users while using online catalogue. Eighteen users conducted their searches on the OPAC As they searched, they talked aloud about what keys they were pressing, what was happening on the screen, and their reactions. Transcripts of sessions were analyzed. A total of 524 protocols were noted during search sessions.

Major advantages of the verbal protocol method are the quality and quantity of data obtained. Protocol analysis is particularly useful in studying areas where little is currently known.
3.6 COLLECTION OF VERBAL PROTOCOL DATA

Participants conducted their own searches in the OPAC stations with the researcher present, while talking aloud about their searches, what keys they were pressing and how they reacted to information on the screen. Search sessions were recorded on audiotape.

3.6.1 Following is the narration of the researcher's self introduction

Hallo. I'm conducting a research study on the online catalogue. May I take about a minute of your time to briefly explain my project and ask for your participation?

My name is Tamal Kumar Guha. I am an assistant librarian in the Indian Institute of Technology, Guwahati. I am also working on a doctoral programme in Library and Information Science at the North Eastern Hill University. As part of my work towards this degree, I am conducting a study to find out how a user faces problems and solve the same or ask for guidance while searching an online catalogue. What I am asking people to do is to conduct the searches they came to the library to do, while talking aloud about what they're doing and how they react to the computer interface. This would be done in this computer station, itself. Participation is purely voluntary; please feel free to say no if you would rather not participate. The search session will be recorded on audiotape and is completely confidential. After the search session, there will be a small questionnaire handed over to you, which can subsequently fill up and send to me. We have enclosed a self addressed and stamped envelops for your convenience. No information that would identify you, as an individual would be collected.
The time required for this study is about the same as your search is likely to take, plus about five extra minutes for talking and questions, including this time.

Are you willing to participate in this study?
If said no, then: “thanks for your time, and good luck with your search.”
If said yes, then: I’d like to give you a copy of this brief summary of this research project, including the name and phone number of my research guide, should you have any concerns or questions about the study.

3.6.2 Guidance during the “Think Aloud”

The main focus of my study is evaluating the computer interface of the online catalogue, that is, does it help people to find the information or materials they need, or does it need improvement?

So, what I’d like you to do is to conduct your search as you usually would, but talk aloud about what you’re doing, that is, what keys you’re pressing, what you’re seeing on the screen, what you’re looking for on the screen, that type of thing, as well as how you feel about the information the computer is giving you. Do you have any questions before we start?

Any comments to participants, if needed, both at this time and during session, are restricted to:

• Talking about what they are doing;
• Comments on the reasons for what they’re doing;
• Comments about how they feel about what’s on the computer?

Finally:

I’d like to thank you very much for participating.
3.7. Method for Quantitative Research

3.7.1 The questionnaire

The questionnaire booklet (Appendix-V) were prepared based on the Van House et al. (1990) and SUMI questionnaire (Kirakowski, and Corbett, 1993). The Software Usability Measurement Inventory (SUMI) is a rigorously tested and proven method of measuring software quality from the end user's point of view.

There were total of 25 items, which were divided into two sections. The first 16 items were pertaining to various information about the online searches and opinions. The scale items were averaged on 5 point Likert type rating scale ranging from 1 = to a very great extent; 2 = to a great extent; 3 = to some extent; 4 = to small extent; 5 = not at all.

Section II of the questionnaire consists of 9 items of background variables. The background variables taken into consideration are: present age, sex, marital status, profession, linguistic group, specialization, experience of the OPAC of The British Council Library, Kolkata and experience of using any other OPAC system. Single item measure was named for background variables having scales ranging from 1 to 13.

3.7.2 Collection of Quantitative Data

After each session all the participants were provided with a questionnaire booklet, which basically asked about the same online catalogue search.
Out of 18 participants two collected the questionnaire to submit later and rest all filled up the same within half-an-hour. The two questionnaires were received by post, subsequently.

3.7.3 Statistical analysis
To analyze the statistical data mainly following the techniques were employed:

   a) Cross-tabulation among the background variables,
   b) Partial Correlation among background and the usability variables,
   c) Bivariate Pearson's Correlation among the usability variables.

All statistical techniques were performed using SPSS for Windows (ver.10.1.4), 2001.