Wayfinding Behavior of University Library Users in Mumbai : An Explorative Study

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ABSTRACT

Libraries often intimidate new or potential users through their size, complexity as well as unfamiliar tools and technology. Observing library users coping with the environment and perceiving their behavior, assists in planning and designing an ideal guidance system. The present article is based on an observation of university library users in Mumbai. The study provides narratives of variety of tasks completed by participants with average task completion time (ATCT) and further explores users' facial expressions and behavior and conducted cause analysis. Findings revealed that majority of participants in university libraries felt that wayfinding is complex and not self-oriented even after attending library orientation, due to the complexity of library buildings and lack of appropriate signage. The analysis of ATCT highlighted that maximum users of the university libraries in Mumbai require inordinate time to find their way and locate the required information source. Many participants experienced confusion, disorientation, indecisiveness and anxiousness while navigating and searching for information sources in libraries. It further revealed that major reasons behind prolonged time required in task completion were user specific such as user unawareness about library physical settings, classification schemes, floor-wise splits in stacking arrangement, availability of facilities, etc. The observational findings and recommendations lead to serve as a starting point in defining patron orientation needs.

Keywords: Behavioural observation; Human orientation; Signage; University libraries; User-friendly libraries; Visual guidance system; Wayfinding.

1. INTRODUCTION

Unexplored surroundings very often result in challenges while navigating and finding the way. Libraries are no exception to this. Libraries often intimidate new or potential users through their size, complexity as well as unfamiliar tools and technology. For new library users, it is a challenge after knowing that all the necessary information is available in the library, but not knowing how to get it. Observing readers coping with the environment and perceiving their behavior assists in planning and designing an ideal guidance system. Pollet and Haskell[1] rightly point out that the focus of guidance system should be on functions and behavior, not on walls and spaces. Accordingly, taking into account that behavioral aspects can serve as a starting point in defining patron orientation needs, a study of university libraries on wayfinding was conducted in Mumbai, India.

Wayfinding studies help in creating a comprehensive, clear and consistent visual communication system with concise messaging. By studying user reactions and behavior to the surroundings of libraries, librarians can make their libraries more accessible and user-friendly. Many of the earlier studies in developed countries have been conducted to explore wayfinding experiences especially in university libraries like at Florida State University Library, (Kinsley, Schoonover, and Spitler)[2] University of Chicago (Larsen & Tatarka, 2008)[3] and University of Illinois (Hahn & Zitron, 2011)[4], due to the complexities of such huge buildings. How well people are able to find their way in libraries has an impact on their ability to successfully use library facilities to fulfil their own information needs. With this need and concern the present study was conducted, which focuses on wayfinding experiences and behavior of university library users in Mumbai. It adopts an ethnographic research approach and uses direct observation to determine whether users can successfully navigate varied spaces and find required library materials on their own. The present research is a part of major research on human orientation in university libraries in Mumbai, India.

2. NEED FOR RESEARCH

University libraries are unique in their own way in the sense that their floor plans and architectural settings are totally different from other types of libraries. They are very spacious and often multi-storied. There are a few rooms housing the collections. Most of the items are on open stacks stored in departments often encompassing large open spaces, sometimes even floors. Due to this, it is difficult to identify small spaces with names, to help patrons isolate specific locations of items.

The items in the collection pose an additional problem. Many of them are of the same size and shape. They are stored in large numbers of linear feet of shelving. Even though the collection is organised with the help of a classification scheme, new visitors are not much familiar with the classification scheme and the numerical arrangement of the collection. Neither the items in the collection nor the shelving has distinguishing characteristics to aid in the finding process. Just getting information about where the items are stored in the building is often a challenge.

University library users belong to varied age groups, backgrounds, and educational levels. First year post graduate students or newly enrolled students do not have experience of using such large libraries; some may have never visited a large library before. In addition, every year such libraries add new users. Users unfamiliar with the library engage in wayfinding and navigation, and this process can be either aided or frustrated by the environment they encounter.

3. LITERATURE REVIEW

According to Misenhelter[5], in the sphere of academic librarianship, limited mention has been made regarding navigability within library spaces by means of general wayfinding. In the light of this statement, a review of the literature was carried out to explore the previous studies completed on wayfinding especially conducted in library settings. Research on wayfinding is very scanty but is conducted in a wide variety of settings, covering city areas as well as buildings. This literature review is limited to the discussion of wayfinding in buildings.

In India, Modak and Patkar[6] have first applied Human Orientation (HO) at bus stations (1981) and at rail terminals (1984). According to authors human orientation is both an art and the science which is applied to guidance systems at public places, to work environment and to living spaces. Authors have also provided a definition to the discipline and pointed out wayfinding as an important factor of human orientation science with nineteen principles of human orientation. Series of examples are quoted to identify the deficiencies in the guidance systems at public places and products. This has brought out the inconveniences and irritations caused by shortcomings in the artefacts and situations faced by people in the work environment and living spaces. Practical examples, illustrations and case studies provided by the authors will definitely help readers and librarians to visualise human orientation problems faced by their users in libraries.

Modak[7] revised the book on human orientation by adding one more principle which discussed the regulation of queue system. The twenty Human Orientation principles propounded in this book are based on very keen observation of surroundings, extensive personal experience and intensively intuitive thinking on the root causes of disorientation, inconvenience, confusion, uncertainty and irritation that common people undergo every day. Out of twenty HO principles, first seventeen principles are based mainly on placement and designing of signage as an important facet of wayfinding. Remaining three are based on convenience of objects. He further states that these twenty principles are still in a nascent state and the subject provides ample scope for future research.

3.1 Research on Wayfinding in Library Settings

In spite of the change in library settings from hybrid to digital libraries, and besides those mentioned in the introduction, there are some interesting recent case studies on wayfinding in academic and public libraries.

Using the term 'visual guidance system' to express the central idea to incorporate signage system with all other related components associated with planning and organizing a signage system, Pollet and Haskell1 used term 'wayfinding' as a self-explanatory term for geography and navigation from users' point of view. In short, they include all visual means of helping readers find and use the services of the library.

Kinsley, Schoonover, and Spitler[2] used Go Pro camera as an ethnographic tool for their wayfinding research at Florida State University Library. As a process of data collection students were instructed to find the listed items using whatever tools or methods they normally used to find materials in the library. Researchers followed them with the Go Pro camera attached with the chest harness and recorded the routes taken. The findings revealed that library catalogue, directories, help from the staff, use of smart phones, signs and maps were frequently used tools by users for wayfinding. Responses revealed that the most challenging part in finding items was looking for the reference collection in compact shelving, understanding call numbers, deciphering row arrangement, and being aware of splits in the collection by floor.

The Burke Library at Union Theological Seminary[8] conducted a wayfinding study that also utilised the think-aloud protocol They sought to measure the effectiveness of their signage and recorded trouble spots for new library users, along with the average time of completion for each series of tasks. The hardest tasks included finding a Library of Congress book in the stacks and a bound periodical on the shelf.

Mandel and Johnston[9] took Stempler's idea one step further by focusing their study on the results of expert-reviewed signage systems in selected school libraries. According to them, signs serve three central roles pertaining to wayfinding: directional markers to orient users to space; regulatory in nature, indicating internal or external regulations or policies; and informational, which comprise all other signs in library spaces. Findings illustrated that the majority of signs were informational in nature and only a small percentage were regulatory and directional; color usage was identified as an important consideration, and lack of appropriate directional signage and unclear signs and placement were also identified.

Stempler's[10] case study of a signage redesign project in 2008 at CUNY Staten Island also highlights the need to address issues relating to signage in academic libraries. Stempler's case study also underscores signage as a major factor in a patron's wayfinding ability and emphasises lack of information related to how readers should locate materials within the stacks. The study resulted in the implementation of a color-coded scheme, along with a variety of new informational and wayfinding signs.

In the seminal research on wayfinding within library spaces, Li and Klippel[11] provide valuable insight into how individuals navigates addressing problems and issues within library spaces that inhibit an individual's wayfinding abilities.

Results of the study suggest that while familiarity with specific library spaces certainly plays a role in wayfinding, so, too, does a building's physical structure. According to the authors, signs and maps are the most effective and simplest way to improve wayfinding as spatial guidance tools.

Applying an ethnographic methodology to the investigation of wayfinding, Hahn, and Zitron[4] of the University of Illinois, Urbana-Champaign, locate the navigational signposts in the library building structure that aid in wayfinding, as well as, to highlight fail points (locations where students unable to decide direction). Results of this study accentuate the necessity for a better understanding of classification systems. Further, they asserted that library classification exists both as navigation fail point and also is the major way in which students find navigation success, as well as calling for more maps and better and more uniform signage.

Beecher[12] presents qualitative case studies of three public library buildings in the United States. Observations of volunteers and their perception of way-finding were the tools obtained for data collection. The study reveals that many of the way-finding tools available in libraries do not facilitate item retrieval. Inconsistencies, ambiguities, obstructions, disparities, and operational deficiencies all contribute to end-user frustration and retrieval failure.

Beneicke, Biesek, and Brandon[13] underline the importance of way-finding and different tools of way-finding in libraries, such as signs, light, color, pathways, indicators, etc. The steps for planning and preparing a good design are explained in-depth. The study emerges with sign planning checklist.

There is an identical need for exploration studies for the application of wayfinding behavior research to facilitate design in university libraries especially such research that will improve library signage systems. There is ample material in LIS literature on understanding information needs and how patrons accomplish those needs. There is considerably less focus on the wayfinding information that patrons need. The absence of research-based studies in the Indian context related to wayfinding in libraries motivated the researchers to select the area of research.

4. RESEARCH QUESTIONS

Considering the significance of wayfinding in university libraries following research questions were formulated:

- Are university library users able to successfully navigate and find required information sources in large university libraries in Mumbai?
- What are university library users' experiences while navigating and searching for information as new library users of university libraries in Mumbai?
- How are the users' experiences reflected in the users' behaviour while navigating and searching for information as new library users of university libraries in Mumbai?
- Do the available guidance systems inside the university libraries provide hints and cues to move in the right direction through facilitating self-guidance to first time users of the university library while navigating and searching for information?

- Will observation be the only tool to understand users' experiences while navigating in large libraries?

5. OBJECTIVES

Based on the above research questions following objectives were devised:
- To explore behaviour of library users while navigating and finding information sources at university libraries in Mumbai.
- To explore whether the available guidance systems, provide library users with right cues and hints while navigating and wayfinding at university libraries in Mumbai.

6. RATIONALE

University libraries serve a more heterogeneous population than college libraries. As a result, one cannot generalise findings of wayfinding behavior of university library users without conducting user study of university libraries in this context.

7. SCOPE OF STUDY

The research surveyed university libraries in Mumbai including branch libraries. Out of 13 university libraries in Mumbai, users from 10 university libraries were observed in the present study. Three university libraries were excluded from the study due to consent issues. To focus new users of university library only First-year students of Post-graduate degree and M. Phil/Ph. D. degree were selected as a population of the study. Five library users from each university library were observed. Including users from all 10 university libraries a total 50 library users participated in the study.
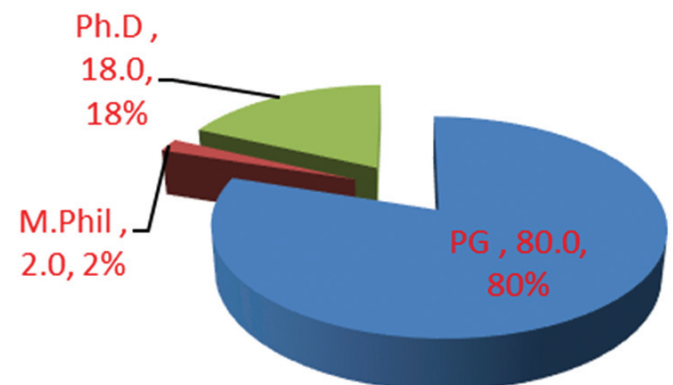

Figure 1. Academic status of participants.

Figure 1 presents the academic status of participants.

Novice users who visited the library first time or a few times but were not yet accustomed with the facilities, spaces and services of the university libraries were considered for the study. Figure 1 shows that 80 per cent participants were Post graduate students, 18 per cent were Ph. D students and 2 per cent were M. Phil. students of first year.

8. METHODOLOGY

The present study followed mixed method of research, including qualitative as well as quantitative aspects. This article presents qualitative part of the study. An observation schedule was designed to observe the university library users

in actual field while navigating and to note information about the behavior of library users while deciding and finding their way in university libraries as well as while searching for information in the library. In addition schedule aid to jot down the descriptions of tasks and details about library users approach and their facial expressions and gestures while navigating and finding their way while reaching towards the required information sources in the libraries. Movements of participants from entry point till the use of OPAC and from OPAC till the required information source were the factors taken into consideration while observing.

The study followed the method adopted by Baker and others[6] making a few additions and enhancements. Baker and others[6] sought to measure the effectiveness of their signage and recorded trouble spots for new library users, along with the average time of completion for each series of tasks. The present study further explored users' behavior and conducted cause-effect analysis. Thus the study used ethnographic research approach and direct observation to explore whether users can successfully navigate a variety of spaces and library collection.

All the participants were new users to the library who visited the library first time or a couple of times but were not yet familiar with the facilities, spaces and services of the university libraries.

9. EXECUTION OF OBSERVATION SCHEDULES

Users participated in the direct observation with due consent. Researcher followed each participant from the entrance of the library and noted their actions, spatial movements and behavior in the structured observation schedule noting the Task Completion Time (TCT) and user's facial expressions. Use of OPAC, reaching towards stacking area and essentially finding out the required source of information were the factors considered while observing participants. In addition situations where participants taken hint or assistance from library staff or from other users of library were also noted. The primary data collected through structured observation schedule as well as through photographs and videos were coded and analysed using ATLAS ti (7.5.4 Version) (Qualitative Data Analysis and Research Software) and SPSS (Version 20).

10. RESULTS AND FINDINGS

Participants were observed while navigating and finding their required information sources. The varied tasks taken up by library users ranged from searching library catalogue to gaining photocopies of the material required.

The average time spent by the participants to complete the required tasks was 18.50 minutes, ranging from an average minimum of 2 minutes to a maximum of 33 minutes.

10.1 Completion of Tasks

Out of 50 participants, 26 (52 %) participants completed their tasks successfully. However, 24 (48 %) participants were not able to complete the required tasks and therefore failed to search and find the required library material (Table 1).

Table 1. Completion of tasks

Particulars	Frequency	Percentage
Successful	26	52
Unsuccessful	24	48
Total	50	100

10.2 Task Completion with Hints and Assistance

Though 26 participants were successful in their tasks, out of 50 participants, 70 per cent (35) had taken the assistance of library staff or from other users of the library while using OPAC or for knowing particular spaces or floors. Merely 10 per cent (5) participants out of 26 were able to successfully find the required information sources without assistance or any hint as shown in Fig. 2.
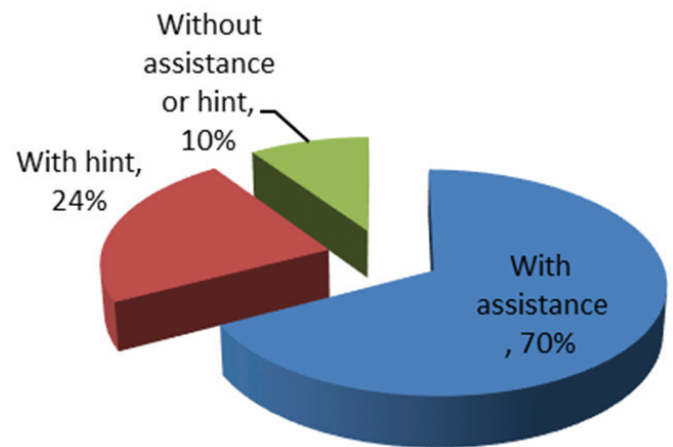

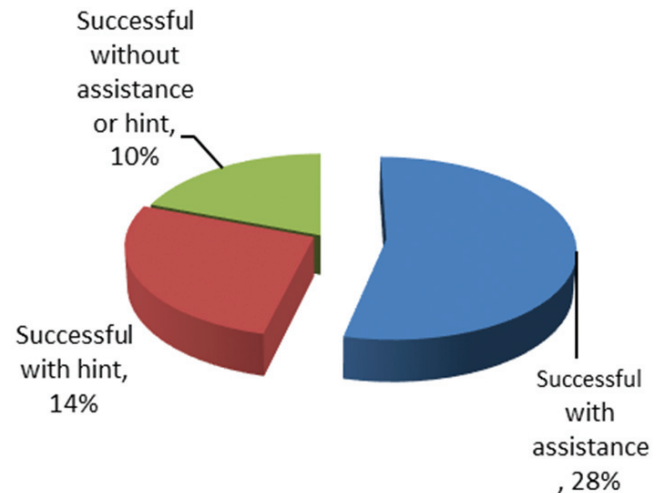**Figure 2. Particulars of completion of tasks.**

Figure 3. Successful in completion of tasks.

Out of 50 participants, 24 per cent (12) participants received hints from library staff. However, only 14 per cent (7) participants were successful in navigating and finding the required library material. Further out of 70 per cent who opted for assistance, only 28 per cent (14) participants were successful in navigating and finding the required library material as shown in Fig. 3.

Out of ten university libraries 80 per cent participants in

three libraries were successful in completing their required tasks.

10.3 Requirement of Hint / Assistance

Out of 50 participants, 70 per cent (35) had taken the assistance of library staff or from other users of the library, from which 28 per cent (14) participants taken assistance for OPAC as well as information source search, 24 per cent (12) participants opt assistance for information source search and 18 per cent (9) participants taken assistance while accessing OPAC search.

Out of total 24 per cent (12) participants who received hints, 6 per cent (3) participants taken hint specifically for OPAC search, 12 per cent (6) participants taken hint for information source search, 4 per cent (2) participants opt hint for OPAC search as well as information source search and 2 per cent (1) taken hint for inquiring working hours of library for Sundays either from library staff or from other users of libraries as shown in Fig. 4.
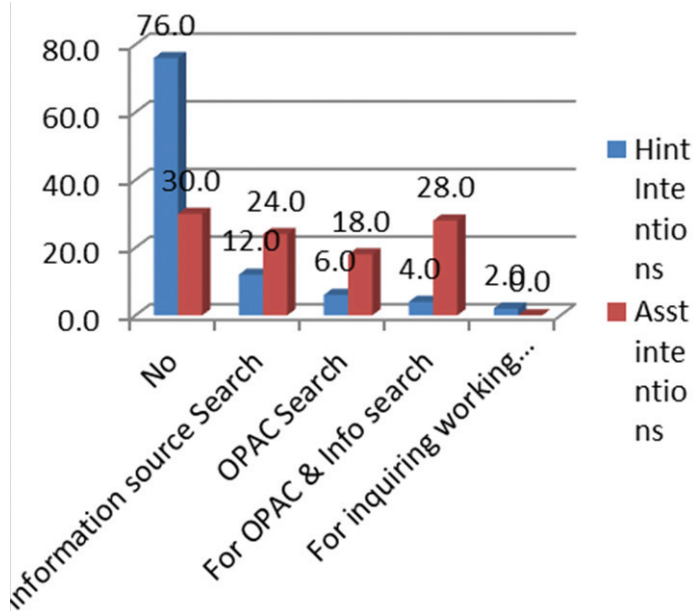

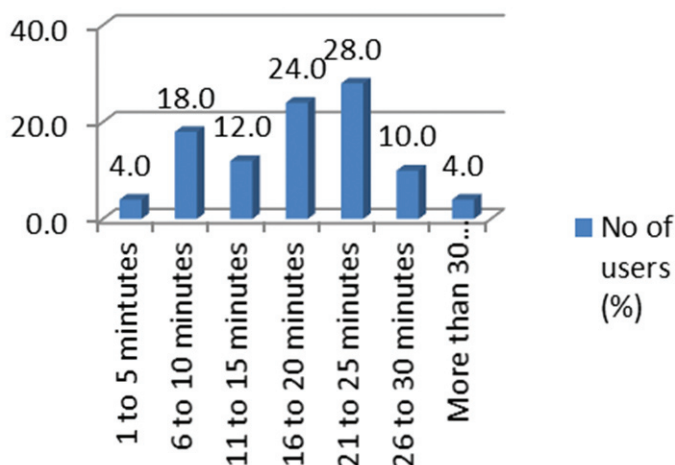Figure 4. Intentions for hint/assistance.

Figure 5. Task completion time range.

Figure 5 highlights that maximum i.e. 28 per cent participants required 21 to 25 minutes to find their way and locate the required information source, 24 per cent participants required 16 to 20 minutes, 18 per cent participants required 6 to 10 minutes, 12 per cent participants spent 11 to 15 minutes, 10 per cent participants spent 26 to 30 minutes, however 4 per cent participants spent more than 30 minutes, and only 4 per cent participants were able to complete their task within 1 to 5 minutes.

Findings further revealed that maximum i.e. 32 per cent (16) participants followed the right steps or series of actions to find out source details and to search information source. However a very few participants i.e. 12.5 per cent (2) were able to complete their task within 1 to 5 minutes whereas a few participants 18.8 per cent (3) spent 26 to 30 minutes for the completion of a task, even though they had followed right series of actions.

The task that required the longest time to complete was from first time user of the library who inquired first about the procedure and the location of the reading room. She filled the prescribed forms and the details on circulation card, then browsed manual card catalogues with author entries and failed to browsed manual card catalogues on her own. Further as per staff instructions again browsed manual card catalogues, searched in the available collection for the lending purpose and issued book from the same.
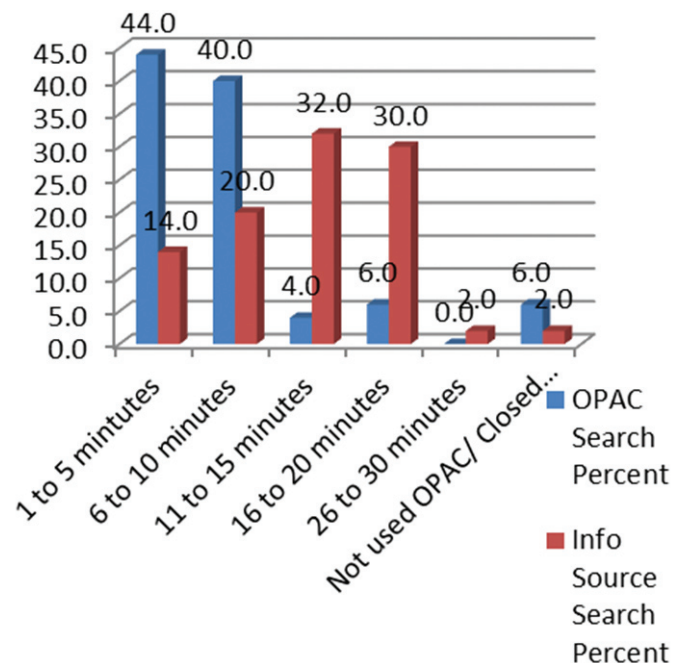

Figure 6. Time spent for OPAC and information source search.

10.4 Time Spent for OPAC/ Information Source Search

Figure 6 shows that 44 per cent (22) participants were able to complete the activity of OPAC search within 1 to 5 minutes, whereas 40 per cent (20) participants required 6 to 10 minutes for searching OPAC, 4 per cent (2) participants required 11 to 15 minutes and 6 per cent (3) participants required 16 to 20 minutes respectively. 6 per cent (3) didn't use OPAC.

In case of information source search 14 per cent (7) participants able to find required information source within 1 to 5 minutes, 20 per cent (10) participants required 6 to 10 minutes, however maximum i.e. 32 per cent (16) spent 11 to 15 minutes and 30 per cent (15) spent 16 to 20 minutes, 2 per cent (1) required 26 to 30 minutes to search needed information source in the stacking area.

User-friendly libraries provide more indicators and cues to facilitate comfort and ease, as well as to save the time of library users while using library infrastructure, sources and services. The present findings show that users of university libraries in Mumbai required excessive time to find their way and locate the required information source. In addition participants also required hints and assistance for accessing OPAC and for searching information sources in stacking areas. Therefore university libraries in Mumbai are not yet entirely user-friendly.
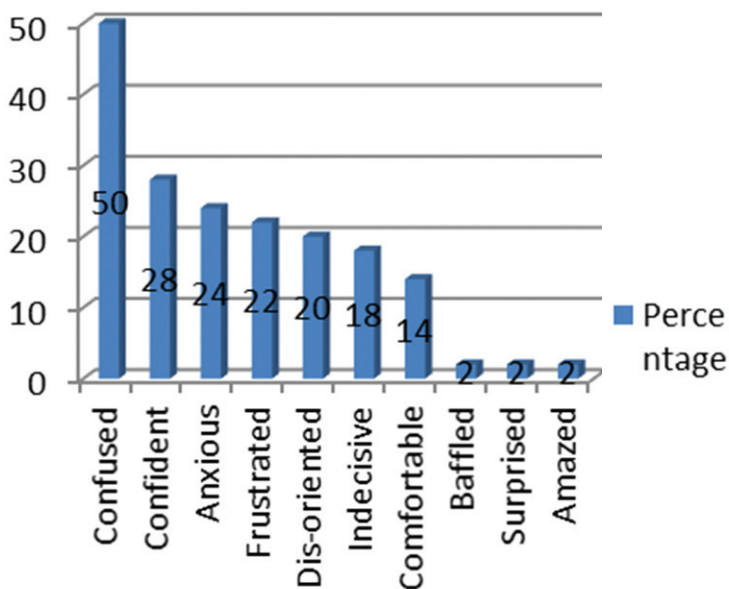

Figure 7. Behavior of participants.

10.5 Behavior of Participants

Figure 7 represents that maximum i.e. 50 per cent participants were confused, 28 per cent participants were confident, 24 per cent participants were anxious, 22 per cent participants were frustrated, 20 per cent participants feel disoriented, 18 per cent participants feel Indecisive, only 14 per cent participants feel comfortable, 2 per cent of participants find it baffled, 2 per cent of participants were surprised and 2 per cent of participants were amased either while using OPAC, while wayfinding in libraries or while physically searching information sources in the stacking area. Behavior of participants changed as per the situations, some participants were confident while entering and using OPAC but got confused or frustrated or disoriented while physically searching information sources in the stacking area. Hence behavior was analysed by noting multiple expressions by allocating different code for each behavior. Therefore though the participants were 50, 91 varied types of behavior were observed.

10.6 Status of Library Orientation and Success Rate

Library orientation helps new users to get acquainted and familiarised with the library collection and services. University libraries enrolled new users every year; hence it is necessary to provide library orientation every year after the enrolments. Out of ten universities observed one does not conduct library orientation due to non-appointment of the librarian.

Figure 8 shows that total 32 (64 %) participants attended library orientation, however, 18 (36 %) participants were either not attended library orientation or in case of few library users, library orientation was not provided by university libraries. Cross tabulation further highlights that out of 26 successful participants, 18 (69 %) participants attended library orientation however 14 (58 %) participants failed in completion of tasks even though they had attended library orientation.
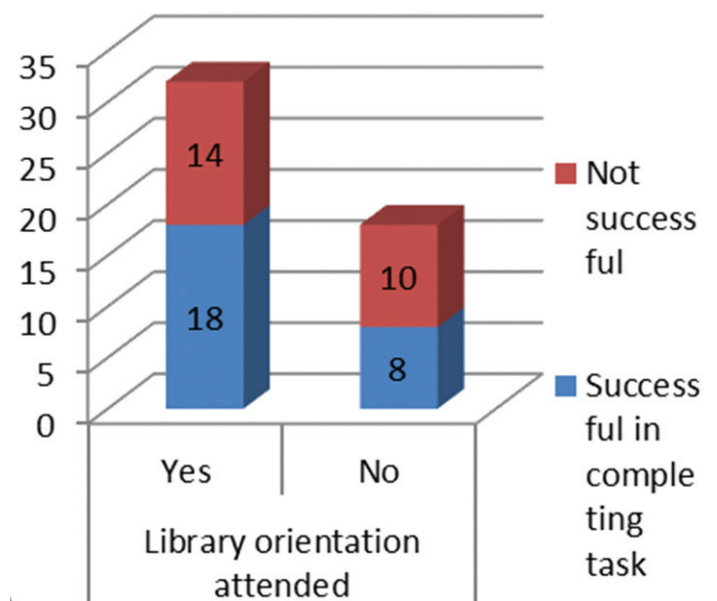

Figure 8. Attendance for library orientation v/s success rate.

10.7 Reasons for Prolonged Time Requirement for Tasks Completion

The cause analysis conducted brought forth various reasons related to wayfinding and signage inadequacies. Following are the reasons for prolonged time required for tasks completion.

Table 2 indicates that merely 10.9 per cent of participants were well-aware about OPAC use and the shelving arrangement and the library. However inability to understand class number & shelf arrangement was the major reason behind confusion or failure in tasks among 20 per cent participants, followed by other reasons such as unawareness about use of OPAC and shelving arrangement 16.4 per cent, unavailability of shelf location in OPAC & unavailability of Stack end signage 9.1 per cent, as mentioned in Table 2.

11. OBSERVATIONS

Observational findings were divided in three categories such as general observations about wayfinding behavior

Table 2. Reasons for prolonged time requirement

Reasons	Responses		Per cent of Cases
	N	Per cent	
Unable to understand class No. & shelf arrangement	11	20.0	22.0
Unaware about the use of OPAC and shelving arrangement	9	16.4	18.0
Aware of OPAC use and the shelving arrangement & library.	6	10.9	12.0
Unavailability of shelf location in OPAC. Unavailability of Stack end signage	5	9.1	10.0
Improper shelving	4	7.3	8.0
Unaware about use of manual catalogue cabinets	4	7.3	8.0
Absence of signage for reading hall & other spaces.	3	5.5	6.0
Lengthy Book issuing process for within premises	3	5.5	6.0
Unaware about how to search for articles from back volumes in OPAC.	2	3.6	4.0
Unaware about floor-wise splits in shelving order of the library collection	2	3.6	4.0
Unaware about reference and text & its availability status in OPAC	1	1.8	2.0
Unaware about non-accessibility of the third floor from front elevator.	1	1.8	2.0
Unaware about availability of entry to the mezzanine from backside staircase.	1	1.8	2.0
Unaware of availability of an elevator due to unnoticed the signage of the elevator.	1	1.8	2.0
Unnoticed the signage of floor-wise distribution and order of books	1	1.8	2.0
Wrong stack end signage	1	1.8	2.0
Total	55	100.0	110.0

of participants, observations about OPAC use in university libraries in Mumbai, and observations about locating books and journals on shelves.

11.1 General Observations about Wayfinding in University Libraries in Mumbai

Major participants during experiment had taken assistance or hint from library staff or other library users. It shows that university libraries in Mumbai lacks in self-orientation of library users.

Regardless of available signage major participants in university libraries felt that wayfinding was complex or not self-oriented due to the complexity of library buildings and lack of appropriate signage. Many participants experience confusion, disorientation, indecisiveness and anxiousness while navigating and searching for information sources in libraries.

During the experiment, the aspect that caused most confusion was the inability to understand the class number & shelf arrangement. The other hurdles in wayfinding mentioned by participants were difficulty in finding entry to mezzanine floor, basement stacking areas, as well as difficulty in finding electric switches in such isolated spaces.

Most participants stopped immediately after entering in the library near the entrance to decide which way to go or inquired at entrance counter/ baggage counter about required section or departments. Participants also mentioned difficulty orienting themselves within open spaces, browsing areas as well as in locating different departments and service areas.

Findings also revealed that that major reasons behind confusion and failure in tasks were user specific such as user unawareness about library physical settings, classification schemes, floor-wise splits in stacking arrangement, availability of facilities, etc.

A few participants from three university libraries approached library staff for inquiring working hours of library and location of photocopy section, location of back volumes of journals, due to the absence of such informative and directive signage. In all these three university libraries very few permanent signs were available.

11.2 Observations about OPAC use in University Libraries in Mumbai

Participants had a difficult time figuring out reference collection and general collection while browsing OPAC.

In all university libraries in Mumbai due to the absence of floor location in OPAC, it was complicated for participants to decide from where to start searching physically for library material even after noting exact source details.

In case of a few university libraries, desktop of OPAC terminals was protected through passwords or screen locks. Due to the absence of instructions or signs for the same participants get frustrated and approached library staff.

In some libraries, OPAC instruction manuals or guidelines were available near OPAC terminals. While in a few libraries due to the absence of such manuals or instructions few participants avoid using OPAC or preferred to take assistance from staff while using OPAC.

11.3 Observations about Locating Books and Journals on Shelves

Findings revealed that most participants found difficulty in understanding shelving arrangement.

The absence of floor-wise call number range sign to highlight floor-wise splits in the collection made it challenging for participants to decide where to begin for the search of the required book.

The absence of floor maps or informational sign about the

floor-wise division of type of collection made it demanding for participants to think about where to begin for the required bound volume of a journal in many university libraries.

Almost all participants found the call numbers difficult to understand while searching the printed materials. Many of the participants expressed that; there should be an availability of subject headings in shelving areas.

A few participants mentioned that there was a lack of air ventilation and enough provision of light in the stacking areas. Whereas others could not locate electric switches in the stacking areas due to absence of signage for the same.

12. RECOMMENDATIONS

Following are the recommendations based on findings and observations.

12.1 Recommendations for Wayfinding

- There is a need to add directional signage with floor maps and directory display signs on each floor with a designated list of departments and facilities available on each floor to provide right direction without a need to ask instructional and directional questions.
- Location guide map with the specifications about the floor-wise allocation of the printed collection as well as library sections, resources and services should be designed and place at the entrance counter.
- 'You are here' maps should be available at every floor of libraries at a visible point or at decision points where users routinely stop or unable to decide which way to go.
- Display of library working hours should be made available at or near the main entrance of the library to minimise FAQs as well as to save the time of users.
- Use of consistent, uniform names for spaces throughout all library signage and literature.
- Changeable signage should be used especially in the shelving area, for showing opening and closing hours, as well as for current and forthcoming activities.
- Use of paper signage should be minimised as it affects consistency in signage system and results reducing the effectiveness of total display system.
- There should be no obstruction between the signs and the users' vision point of view.
- Preference should be given to pictorial signs with the use of universally identified pictograms and symbols. This allows the signs to be independent of language barriers.
- Signage should be placed for the mezzanine floor at a visible point, as in many university libraries stairs for the mezzanine floors are available in stacking area which is not easily visible.
- It is essential for university libraries to provide in-depth library orientation along with physical library tour to familiarise novice users with the university libraries.

12.2 Recommendations for OPAC

- The broad classification system can be briefly explained in library orientation and made available at OPAC terminals.
- A display of library map or floor plan next to the computer

terminal for catalogue search will be a great aid in finding library resources.
- Passwords for screen lock of a desktop of OPAC terminals should be avoided otherwise instructions or signs should be provided about the same near OPAC terminals.
- A separate call number range sign should be added for the reference collection near the area where it is placed.

12.3 Recommendations for Stacking

- Often different places use different systems, therefore while floor wise splitting the library collection, broken orders in the collection should be specified and suitable signage should be available in such cases.
- Signage should be added for finding electric switches in the book stacking area.
- Use of shelf-talkers, bookmarks or display stands for highlighting signs of class numbers, subject headings will increase the accessibility to the library resources.
- Call number range sign should be assigned for back volumes of journals and should be placed at the entrance of journal section and near the stacking area of bound volumes.
- Use of different colors for binding as per different subjects will help users to search the sources easily in the stacking area. In addition, the same practice can be followed to bound volumes of journals for easy identification. If such colors are used according to discipline the same concept can be used in an online catalogue for searching.
- Stack end signage should be updated frequently with the addition of printed material on shelves.

13. CONCLUSIONS

It has been said that 80 percent of what one learns come from vision. Visual communication is dependent on the eye and the brain. The concern here is not with the extremes of visual functioning, but with how visual information can best be transferred within the limits of good design and sound signage system for all users of libraries (Pollet and Haskell1Pg.33). Providing adequate visual guidance in libraries is a difficult and complex task. In order to navigate successfully in the built and cement jungle environment, humans need information provided by wayfinding systems and tools, for instance, architectural cues, displays, signs, and maps. This is all the more important in university libraries where users enter in unfamiliar environments in wide-spread university libraries and possibly anxious (which may interfere with the ability to navigate successfully). To facilitate user wayfinding, which in turn can facilitate user information-seeking by helping the user navigate throughout the facility while looking for informational resources and materials, university library facilities need to be designed with consideration of users' wayfinding needs, along with their information-seeking and other library-specific needs.

A significant amount of work remains to be done related to wayfinding studies in the Indian context as such studies are carried out mainly in developed countries. Wayfinding studies will aid in designing a good signage system which in turn will help to explain the facility and, in a sense, answer the questions

before they are asked. In-depth case studies need to be plan for individual large libraries to implement good signage system in Indian libraries.

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