

# Students' Preference for Online Catalogue Search: Discovery Tool Vs Traditional OPAC Interface



Thesis submitted to the University of Dhaka in a partial fulfillment of the requirements for the degree of Master of Arts (MA) in Information Science and Library Management.

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## Declaration

I hereby declare that the thesis entitled **“Student’s Preference for Online Catalogue Search: Discovery Tool Vs Traditional OPAC Interface”** is my own work and to the best of my knowledge and belief it contains no material previously published or written by any other person.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or institution.

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**Dedicated to My Parents**

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## LIST OF ABBREVIATIONS/ACRONYMS

|               |                                         |
|---------------|-----------------------------------------|
| <b>APA</b>    | American Psychological Association      |
| <b>BRACU</b>  | BRAC University                         |
| <b>CD-ROM</b> | Compact Disc-Read Only Memory           |
| <b>GUI</b>    | Graphical User Interface                |
| <b>HTML</b>   | Hypertext Mark-up Language              |
| <b>ID</b>     | Identity                                |
| <b>ISBN</b>   | International Standard Book Number      |
| <b>ISSN</b>   | International Standard Serial Number    |
| <b>LMS</b>    | Library Management System               |
| <b>MLA</b>    | Modern Language Association             |
| <b>NLM</b>    | National Library of Medicine            |
| <b>OPAC</b>   | Online Public Access Catalogue          |
| <b>PC</b>     | Personal Computer                       |
| <b>PDF</b>    | Portable Document Format                |
| <b>RSS</b>    | Really Simple Syndication               |
| <b>SD</b>     | Standard Deviation                      |
| <b>SPSS</b>   | Statistical Package for Social Sciences |
| <b>UGC</b>    | University Grants Commission            |
| <b>URL</b>    | Uniform Resource Locator                |

*“I have always imagined that Paradise will be a kind of library.”*

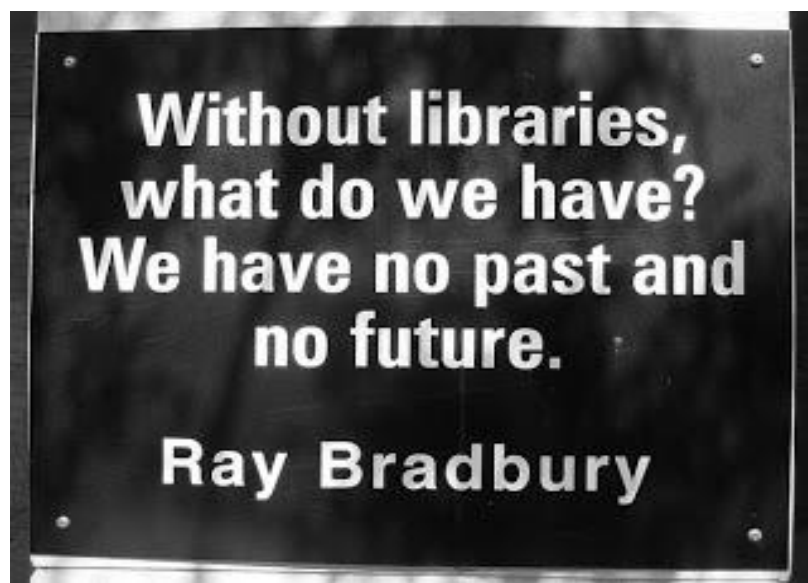
— **Jorge Luis Borges**

*“I declare after all there is no enjoyment like reading! How much sooner one tires of any thing than of a book! -- When I have a house of my own, I shall be miserable if I have not an excellent library.”*

— **Jane Austen, Pride and Prejudice**

# CHAPTER - 1

## INTRODUCTION



## **1.0 INTRODUCTION**

Today's library users have a different set of information skills from those of just a few decades ago. Library users today live in a highly interactive, networked world and routinely turn to web search engines to fulfill their information needs (Coyle and Hillman, 2007). Therefore, the card catalogue became the online catalogue, which let users search for physical items within the library. Most print journals became online journals. Libraries needed to let users find the online journals they subscribed to through various large and small publishers and hosts. They built simple in-house databases, or add them to the catalogue.

Most library users wanted everything in one place to search which is quite understandable. So, libraries started to attempt and find ways to add online content to their catalogue systems. To locate document libraries make available a location tool in the form of a catalogue. At present most university libraries worldwide provide a computerized catalogue known as Online Public Access Catalogue (OPAC). It has been used since the late 1970s and become popular in the 1980s (Guha and Saraf, 2005). Some university libraries in Bangladesh are currently providing online catalogue to users for finding the documents they require.

The online catalogues (OPAC) were simple web interfaces supplied with the much larger library management system (ILS or LMS) which ran the backend the public never saw. Kao (2001) revealed that OPAC provides wider access, since users can retrieve information from any participating library or even search online from their home computer.

Yu and Young (2004) noted that "Web search engines and online bookstores have a number of features that are not typically incorporated into OPACs. These functions include: natural-language entry, automated mapping to controlled vocabulary, spell-checking, similar pages, relevance-ranked output, popularity tracking, and browsing". These features have unquestionably affected user expectations in searching library OPACs.

Libraries have expanded their collections to include electronic content, but integrating these resources into the catalogue proved challenging (Breeding, 2007). Classic

catalogue does not include article level searching or searching of local digital library collection. Fagan (2010) noted that discovery tools like VuFind could “provide an improved experience for library patrons by offering a more modern look and feel, new features, and the potential to retrieve results from other major library systems such as article databases”.

Prior to 2009 the words “discovery” and “tool” appeared together infrequently in the library literature. There were discovery environments, discovery services, and discovery products, but only the occasional discovery tool. The Association of Research Libraries’ Scholars Portal, which was in the news from 2000-2003, was one prominent exception. The Scholars Portal was consistently described as a discovery tool which enabled users “to search across certain limited but diverse and distributed websites, library catalogs, and databases of information resources to retrieve and integrate the results in a single presentation” (ARL, 2001). Some proprietary discovery tools are:

- Encore-Innovative Interfaces Inc.
- Endeca-Endeca
- Primo –Ex Libris
- SirsiDynix Enterprise-SirsiDynix
- WorldCat Local-OCLC

Some open source Discovery tools are as follows:

- Blacklight
- Fac-Back-OPAC (Kochief)
- Library Find
- Rapi
- SOPAC (Social OPAC)
- VuFind

VuFind is a next generation catalogue that harvests data from OPAC and other sources, such digital repositories, creating a single searchable index (Sadeh, 2008). It is an open source OPAC replacement created to be a comprehensive interface for all of a library's content, including:

- Catalogue records
- Institutional repository items
- Online journal information.
- Digital library items
- Other library collections and resources

### **1.1 BACKGROUND OF THE STUDY:**

BRAC University inherited the Ayesha Abed library from BRAC in June 2001. Ayesha Abed Library at BRAC University aims to become a world-class Knowledge Resource Centre and provide innovative new services and a wider collection of books and resources to the teaching, learning and research communities, using latest technological developments of the 21st century. The development, organization and maintenance of archives in multiple locations; access to world class resources; personalized assistance in the use of library and information resources; and instruction on research strategies and tools have made this one of the richest libraries in the country.

BRACU Library has successfully implemented a project entitled “Implementing next generation open source discovery tool VuFind at BRAC University Library funded by INASP, UK in May 2010. VuFind is open source software which was selected as the preferred search and discovery interface for BRAC University Libraries. As the first open source discovery tool project in Bangladesh, VuFind was launched at BRACU in January 2011.

## **1.2 PROBLEM STATEMENT OF THE STUDY:**

The concept of this study arose from a general observation. In Bangladesh, only Aysha Abed library of BRAC University has successfully implemented traditional OPAC interface and VuFind in their library website.

When OPACs were first developed in the 1970s, they were welcomed by library users (Dowlin, 1980). More recent advances have even broadened the scope and capabilities of OPACs, increasing their potential to benefit the library user, offering an efficient and self-guided service which does not require heavy reliance upon library staff or card catalogue.

Now libraries have expanded their collections to include electronic content, and integrating these resources into the catalogue proved important. Classic catalogues do not include article level searching or searching of local digital library collection. VuFind is an OPAC replacement created to be a comprehensive interface for all of a library's content.

A number of students at Aysha Abed library use the classic online catalogue (OPAC) to retrieve their required document. In that case, most of them like to locate only the library holdings, especially books. On the other hand, another group of students who try to pick information from the catalogue records, institutional repository items, online journal information, digital library items etc. requires using VuFind while some students intend to use both interfaces.

This research aims to gain a better understanding of students' preference for traditional online catalogue (OPAC) vs. VuFind for searching information they require.

### **1.3 OBJECTIVE OF THE STUDY**

#### **1.3.1 Broad objective:**

- ✚ To assess students' preference for traditional OPAC interface vs. discovery tool VuFind.

#### **1.3.2 Specific objectives:**

In order to fulfill broad objective, the specific objectives are summarized as below:

- ✚ To examine the various features and components of web-based Online Public Access Catalogue (OPAC).
- ✚ To know the users' capability of understanding the difference of the retrieval mechanisms between OPAC and discovery search tools.
- ✚ To examine the effect of students' individual differences, such as age, gender, computer use and experience in their opinion of various interface characteristics.
- ✚ To identify issues to improve in future design.
- ✚ To better understand the usability of both traditional online catalogue (OPAC) and VuFind.

### **1.4 RESEARCH QUESTIONS OF THE STUDY:**

To achieve the objectives, the following research questions are asked:

- ✚ How effective are the OPAC and VuFind interfaces in satisfying the information needs of the students?
- ✚ Is the interface requires improvement especially, in terms of making it more effective.
- ✚ Which interface do the students generally prefer to use?

## **1.5 THESIS CHAPTER:**

The thesis is presented in seven main chapters. A brief overview of these chapters is summarized below:

### **Chapter 1:**

This chapter gives a brief introduction to this research by explaining the problem statement, objectives, and limitation of the research. It also explains the methodology used throughout the research to come to conclusion.

### **Chapter 2:**

The chapter discusses a summary of the literature conducted to obtain knowledge about the current literary world.

### **Chapter 3:**

Chapter 3 presented a brief description about the various aspects of OPAC interface and VuFind.

### **Chapter 4:**

Chapter 4 presents how research design is constructed.

### **Chapter 5:**

This chapter gives detailed statistical analysis to show the result of the data collected through the questionnaire.

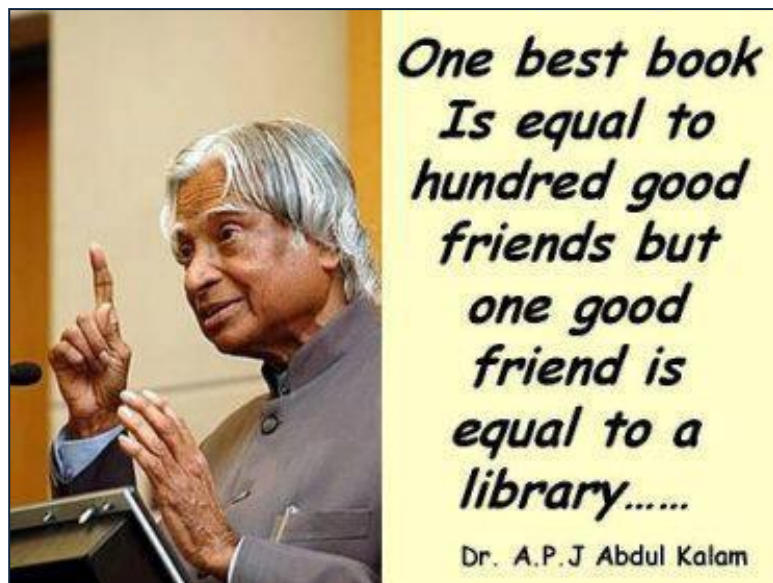
### **Chapter 6:**

This chapter gives major findings and conclusions of the work done in this research by explaining the key recommendation of the research.

Reference and appendix are presented at the end of thesis.

# CHAPTER - 2

## REVIEW OF RELEVANT LITERATURE



## **2.0 REVIEW OF RELEVANT LITERATURE:**

### **2.1 INTRODUCTION:**

In this chapter, a review of relevant literature on various aspects of online public access catalogue (OPAC) and VuFind is presented. Although there is a wealth of literature on OPAC or VuFind, not much literature is available on the use of both OPAC and VuFind simultaneously. This study reviews the literature regarding the usability of OPAC and VuFind.

### **2.2 OPAC:**

An OPAC is considered to be the heart of the library operations and the gateway of library services as it facilitates the patrons to the various services of the library and acts as “an instrument of change in today’s libraries” (Mulla and Chandrashekaras, 2009). There are basically two types of Web-interfaced OPACs in the library world (Babu, 2000):

1. Traditional public catalogue converted to Web-interface.
2. Catalogue that incorporates Z39.50 protocol to the catalogue, which is a powerful communication tool based on client-server interaction search interface to the catalogue and other resources on the net.

The first online public access catalogues (OPACs) were implemented in libraries in the mid- to late 1970s. According to Hildreth (1991), the developments of OPACs can be categorized into three distinct generations on the basis of evolutionary changes to incorporate novel features in data content, access points and user interfaces. In a later study, Hildreth (1989) summarized the characteristics of three generations of OPACs: “the first generation OPACs were mainly constrained by file structures and second generation by functional consideration. To make a third generation OPAC it will be necessary to start with the user interaction component.”

Hildreth (1991) mentioned the following characteristics of first generation OPACs:

1. referred as “Phrase indexed or Pre-coordinate OPACs”
2. derived from traditionally searched catalogues of library cooperatives and networks;
3. limited interface facilities for public;
4. features are similar to card or COM catalogues;
5. library oriented systems;
6. menu driven and simple to operate;
7. sophisticated combinations of search could not be made;  
and
8. OCLC is an example.

Despite the initial apparent welcome and popularity with library users, OPACs were also immediately recognized to have several limitations. It was shown that library users had already begun to desire even greater accessibility and effectiveness from the OPACs. Dowlin’s (1980) research, for example, suggested that if the search capabilities of the OPAC were improved, the number of people who preferred OPACs to card catalogues would rise from 85.4% to 94%].

During the transition from first to second generation OPACs, research appears to have focused on how users interacted with OPACs. It was these types of studies and their conclusions which functioned to inform the second generation of OPACs. The features of second generation OPACs were characterized by Hildreth (1991):

1. Derived from commercial bibliographic information retrieval systems of 1970s like DIALOG, BRS, etc.;
2. Provides multi-access points;
3. Referred as “keyword or Post-coordinate OPACs”;
4. Facilitates sophisticated search combinations using Boolean logic;
5. Needs training to understand the operators, search logic, etc.;
6. Resembles an online bibliographic IR system.

The second generation OPACs were considered more user-friendly and provided 'keyword searching, Boolean matching, browsing facilities and improved online help provision' (Large and Beheshti, 1997).

When research has been conducted outside the information searching context, the purpose has been to improve the design of the OPAC. Overall, it seems any complete idea of how the OPAC has continued to function within the broader library environment post 1985, has been largely neglected. This trend can be seen to continue into the third generation of OPACs.

The characteristics third generation OPACs are (Hildreth, 1991):

1. Possess the combined features of first and second generation OPACs;
2. Facilitates improved subject access;
3. Facilitates ranking of retrieved output;
4. Facilitates partial and coordination level matching; and
5. Provides access to other kinds of bibliographic information.

Some libraries allow patrons to request items from another library on inter-library loan via the OPAC and this as a "consistent step is improving the availability of information and services" (Malak, 2008).

Fast and Campbell (2004) reported that users preferred to find information on the web over OPACs, while they considered OPACs as well-organized and trustworthy tools. Most users felt that OPACs took longer to search and required more effort. Breeding wrote a special report on next-generation library catalogs in the fourth issue of the 2007 Technology Reports. In this report, he described the shortcomings of traditional online catalogues as follows:

- Complex search interfaces that might not be sufficiently intuitive.
- Not consistent with well established user interface conventions.
- Unable to rank results according to relevance or interest.
- Too limited in scope.
- Tied to print materials and are less able to address electronic content.
- Unable to deliver online content to the user.

Moreover, Breeding (2007) noted that current OPACs are no longer adequate to meet the new challenges in a highly networked and integrated environment.

Several suggestions were made on how to make system (OPAC) easier to use and more attractive. Matthews (1987) suggested guidelines for screen layout according to current understanding of how online catalogues are used. His guidelines include consistent display formats, consistent labeling of information, and brevity. User interface was reviewed by Yee (1991). The features discussed are:

- The demonstration of relationships between records;
- The provision of entry vocabularies;
- The arrangement of multiple entries on the screen;
- The provision of access points;
- The display of single records, and
- The division of the catalog into separate files or indexes.

Cherry (1998) developed guidelines to evaluate OPAC display designs. The checklist was limited to four aspects of

- Display design and covered only labels,
- Layout,
- Text and
- Instructional information.

Babu and O'Brien (2000) developed a checklist more pertinent to the functions and capabilities of present day web-based OPACs. This checklist covers interface and searching capabilities such as search types, search strategies, access points, display options, entry structure, external links, services/facilities, output capabilities, and layout. Surprisingly, this checklist pays no attention to display aspects such as labels, text, and instruction.

It would be interesting to use the interface, if the web-based OPACs under study have embedded such features and components.

A group called the Digital Library Federation (DLF) ILS Discovery Interfaces Task Force was established in 2007 to investigate issues involved in the potential integration between libraries' existing Integrated Library Systems and external discovery applications. The Task Force conducted a survey of current library catalogues, summarizing several major problems as described below (DLF ILS Discovery Task Force, 2008):

- Current systems are built for managing print collections and inventory. The functionality important for this aspect of collection management is not adequate for digital resources.
- Current OPACs are limited in their support for multiple metadata standards and lack support for Functional Requirements for Bibliographic Records (FRBR).
- The OPAC is limited in that it searches only items owned by the subscribing institution. . The OPAC interface is difficult to use and is not intuitive compared to other search tools (particularly search engines and e-commerce sites). The more powerful features of the catalog search are mostly hidden or exposed in such a way as to confuse users.
- Exploratory searching is difficult and the OPACs often lack basic features like spell check and good relevance algorithms. Functionality does not encourage browsing or serendipity.
- Searching for known items can also be problematic if users do not know exact titles or filing rules.

From the above, it is becoming clear that libraries need better tools to keep library services relevant for a new generation of users. The need for a new library catalogue interface seems unquestionable.

### **2.3 VuFind:**

VuFind is an open source discovery tool designed to sit on top of an integrated library system and replace the public catalog interface. Lucia, Nagy, and Barr (2004) mentioned the following features of VuFind:

- Creating a richer, simpler search experience for users, one more like the commercial search services with which users are familiar.
- Faceted browsing and narrowing of search results.
- Supporting the inclusion of graphical, and other enhanced content such as book jackets or data from Google, and OCLC.
- Social functionality.
- Personal recommendations.

Ability to index local resources, such as digital library items, the institutional repository, the institutional bibliography, and other library collections and resources, in addition to MARC records from the library catalog.

Hofmann and Yang (2012) conducted a study of 260 colleges and universities in the USA and Canada in 2011. They found that the use discovery tool has practically doubled in the last two years, from 16 percent to 29 percent. A total of 96 percent of academic libraries using discovery tools still provide access to their legacy catalogue. The percentage of institutions using OPACs with faceted navigation has increased from 2% to 4%. Combining the use of discovery tools and faceted OPACs, at least 33 percent of academic libraries were using a faceted interface. Discovery tools that aim to be the “single point of entry for all library resources” were the most popular.

Denton and Coysh (2011) described a study of usability testing of VuFind at an academic library. The survey demonstrated that users preferred VuFind’s interface over the classic catalogue. They particularly liked the facets and the richness of the search results listings. Users intuitively understood how to use the Library of Congress Subject Headings. Despite the discovery layer’s new functionality, known journal title searching presents a challenge to users and certain terms used in the interface were problematic.

The survey was performed on ten students (eight undergraduates, two graduates), asking a set of 14 task-oriented questions about the customized VuFind interface. Task

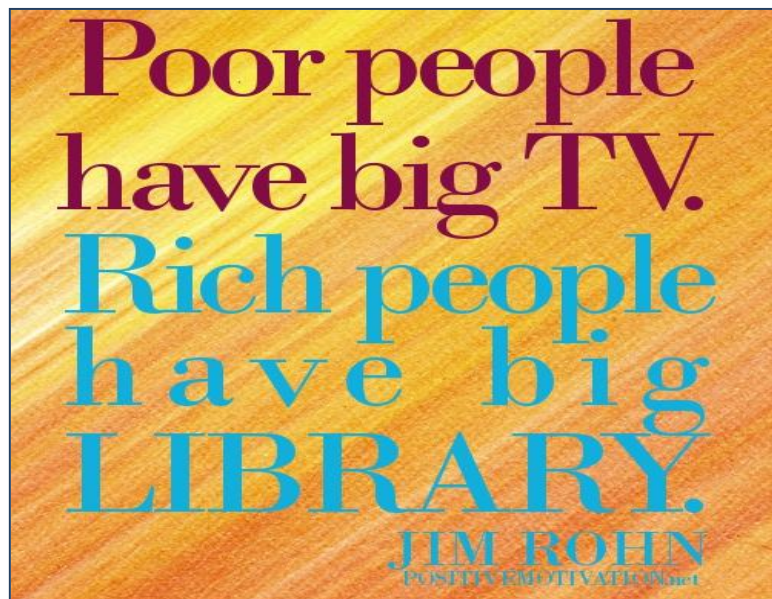
completion was scored using a simple formula to generate a percentage indicating success or failure. Changes to the interface were made based on resulting scores and on feedback and observations of users during testing.

#### **2.4 CONCLUSION:**

A number of literatures were reviewed for the purpose of the research. The literature reviewed did not reveal any empirical research that that compare classic catalogue and discovery tools. Therefore, this research is unique and first to investigate the students' preference for traditional OPAC interface vs. VuFind in searching library online resources.

# CHAPTER - 3

## AN OVERVIEW OF OPAC & VUFIND



### **3.0 AN OVERVIEW OF OPAC & VUFIND:**

A library catalogue is an organized set of bibliographic records. It can also be the list of holdings of a particular library or of many libraries connected via computer. It may include books (referred to as monographs), serials, audiovisual materials, computer files, and digital information. The catalogue can exist in several formats, but we will discuss only the card catalogue and the Online Public Access Catalogue (OPAC).

The card catalogue was the most widely used type of catalogue until the early 1990s. Entries were divided into author cards, title/series cards, and subject cards and alphabetically arranged within each category (Sales, 2004). OPAC started in the late 1970s and is now the most widely used format. Bibliographic records are stored in a database and can be quickly retrieved for display on a computer terminal. Studies by Kao (2001) revealed that OPAC provides wider access, since users can retrieve information from any participating library or even search online from their home computer.

Whatever catalogue format a library chooses, it should be flexible, up to date, and easy to use and maintained. The card catalogue and the OPAC are both flexible. Entries can be added or removed as items are added to or discarded from the collection.

#### **3.1 Online Public Access Catalogue (OPAC):**

An online public access catalogue (OPAC) is a major retrieval tool in libraries that help the user to access machine-readable records for books, audio-visual material, with three reasons:

1. It offers up-to-date information.
2. It offers multi-access points to information held in the library
3. It enables access to information in local, regional, or national

An online catalogue provides online access to the complete bibliographic record of all the Library's holdings with minimal access points being the same as those in a card catalogue (National Library of Medicine).

“A true Online Public Access Catalogue should provide sophisticated access for unsophisticated patrons. It should remove from the patron the burden of any interpretation of library procedures and practices” (Pennsylvania State University).

The majority of today's OPACs have successfully fulfilled the need for finding known items. Following the card catalogue convention, bibliographic elements such as title, author, and subject have been the leading search options in OPAC search menus for many years. It was assumed that users always come to the library with specific author, title, or subject information in mind before searching the catalogue. The OPAC bibliographic display is in essence an electronic version of the card catalogue. To accommodate the bibliographic data from card catalogues, many display labels were created, but often without regard to whether or not they were suitable in an online environment. This data-centered, card-catalogue type of design was easily understood and fluently used by librarians, but not by most end users.

Campbell and Fast (2004) found that "while the participants were generally happy with their understanding of search engines, they frequently expressed a low opinion of their ability to search the catalogue." They also found that students felt that the Web is cluttered; the catalogue is organized. However, this organization was not always helpful; it was admired, but not understood."

The traditional catalogue retrieval mechanism is significantly different from the Web search engine. As Yu and Young noted in 2004, "Web search engines and online bookstores have a number of features that are not typically incorporated into OPACs. These functions include: natural-language entry, automated mapping to controlled vocabulary, spell-checking, similar pages, relevance-ranked output, popularity tracking, and browsing." These features have unquestionably affected user expectations in searching library OPACs.

An OPAC

- Provides the public with direct access to a library bibliographic database though through the use of terminal.
- Is searchable through a variety of access points greater than those available through card form catalogue

- Is searchable with a common command language, which may be transferred when the public moves from one library to another.
- Retrieve information from local library field, and if not successful, locally, retrieves information from other libraries' files.
- Provides instructional help. Display search result in readily understandable form.
- Provides link to card form catalogues, reference help, circulation files, etc. and maybe access remote from the library's location.
- Multiple users can query the database simultaneously unlike the traditional catalogue box where users have to queue when they are searching for similar materials with same search option (Ukpebor, 2011).

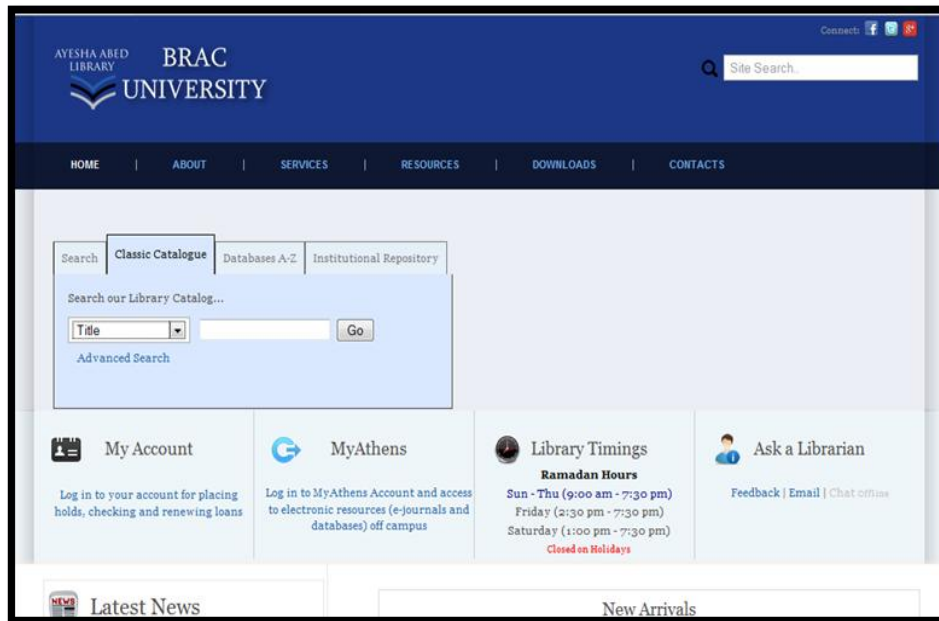
#### **The various advantages of using an OPAC are:**

- It offers a greater number of access points for a single record.
- It provides access to a wide coverage of information quickly.
- It provides information which is not available in printed form.
- It connects to current information since online databases are updated speedily and more frequently.
- It removes the irksome clerical work of typing and arranging catalogue cards; and
- It offers faster search facilities and the capability of Boolean searching

#### **3.1.1 Features of OPAC:**

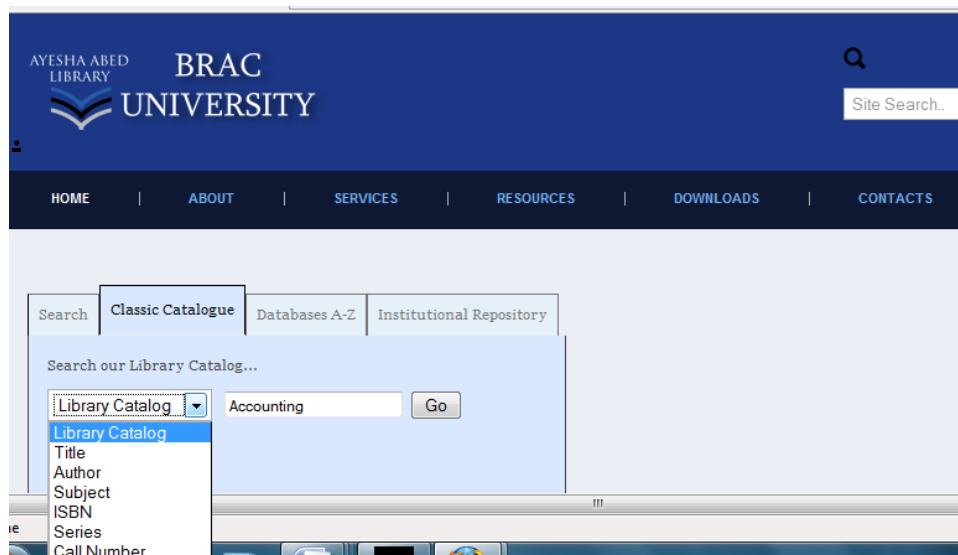
According to Babu and O'Brien (2000), the important features of Web OPACs are:

1. Graphical user interface (GUI), which is typically thought of as a combination of windows with pull-down or drop-down menus, icons and a pointing device such as mouse or trackball to manipulate information.



**Figure: 3.1.1 The graphical interface of OPAC.**

storing bibliographic and full-text databases, providing direct access to a library's bibliographic database by means of terminal or PC; provision of instructional help; display of search results in readily understandable form; sometimes remote access from the library's location; information about community events; provision of links to circulation files, reference help etc; provides search through a variety of access points such as author, title, keyword, subject, periodical title, series, class number, ISSN or ISBN, etc.



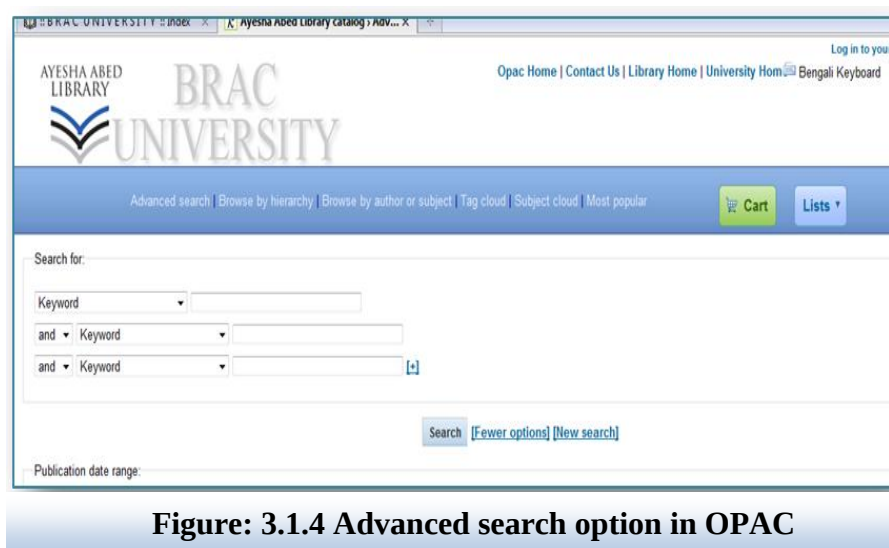
**Figure: 3.1.2 basic search displayed in OPAC showing some of features**

2. Ability to use hypertext links to facilitate navigation through bibliographic records.
3. Emulates the appearance of and offers search features similar to those found in search engines.
4. Links to full-text when available; and
5. Helps to bring a convergence in searching of all electronic information available through one interface, e.g. catalogues, CD-ROMS, Internet sources, etc.
6. Simple keyword search box with a link to advanced search.

It offers a simple keyword search box that looks like that of Google or Amazon. And a link to the advanced search is present when a user feels the need to use it. Students prefer an advanced search and feel that the quick search is more likely to produce results with less precision.



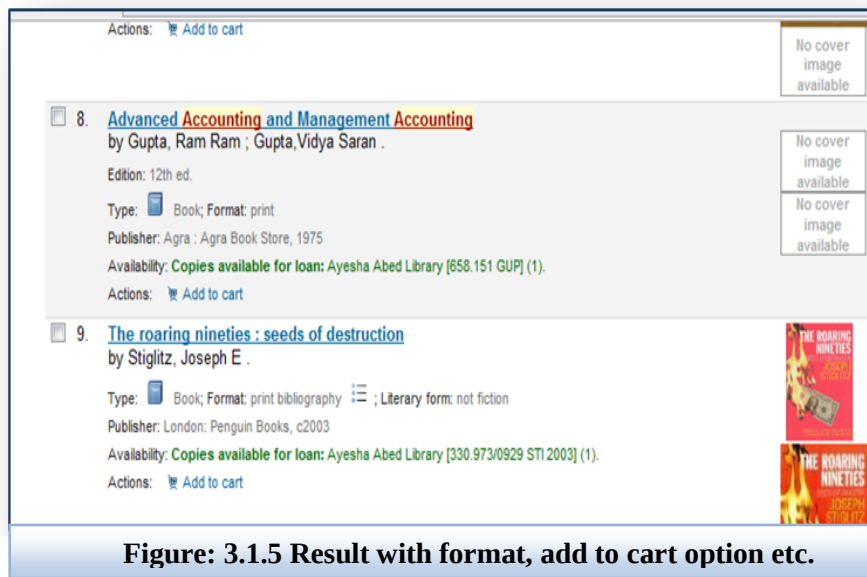
**Figure: 3.1.3 Simple keyword search.**



**Figure: 3.1.4 Advanced search option in OPAC**

### Search result with various categories:

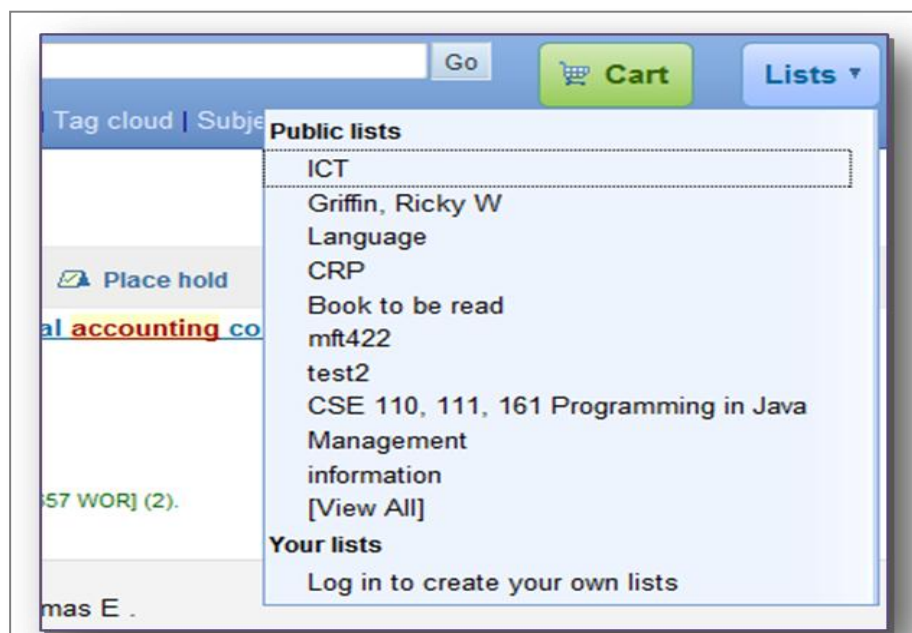
Library catalogs, OPAC is able to display the search results as sets of categories, such as subject terms, dates, languages, availability, formats, locations, call number and option to add into the cart etc.



**Figure: 3.1.5 Result with format, add to cart option etc.**

### Tagging & add to favorites the search result:

OPAC allows tagging, keeping a list of favorites, Most of the students were using the tagging feature and add the search result to favorite. It is one of the most wonderful features of OPAC is that it allows users to add item without any user ID and password. So anyone can enjoy this opportunity.



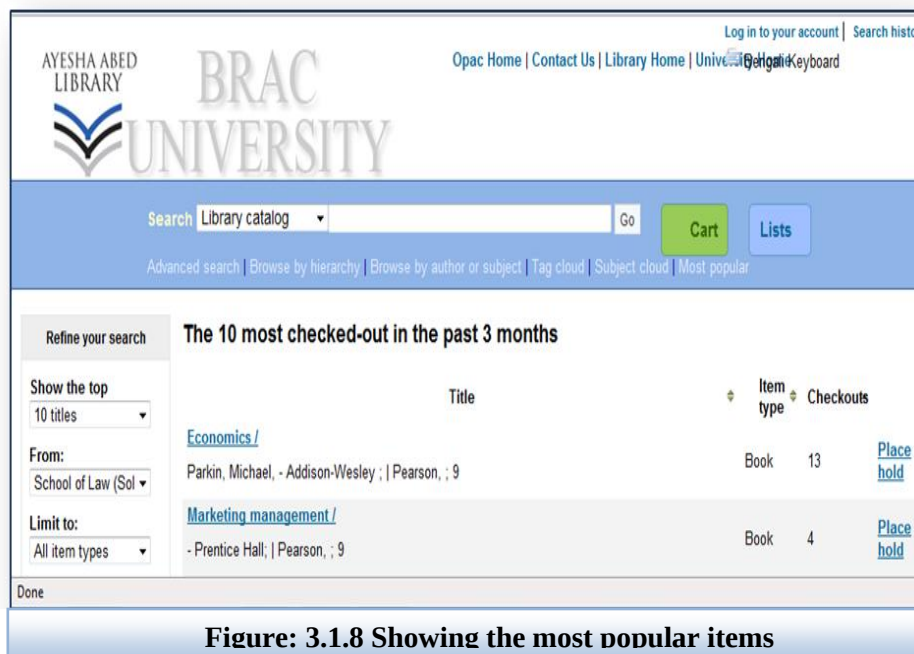
**Figure: 3.1.6 Add to favorite the search result**



**Figure: 3.1.7 Save the result into cart.**

### Showing the most popular items:

OPAC helps students to find which document is most popularly used; hence they can evaluate the importance of those documents relevant to their study.



**Figure: 3.1.8 Showing the most popular items**

It is clear that OPACs have certain inherent advantages over conventional catalogues. The principal advantage is that they can easily be made to provide a much greater range of access points. Another advantage, which until recently obtained mainly in the more

primitive OPACs derived from circulation systems, is the inclusion of availability information and users' ability to make reservations. Most writers would assume that all OPACs in lending libraries must provide this function.

### **3.2 VuFind:**

VuFind is an open source OPAC replacement created to be a comprehensive interface for all of a library's content, including library record, journal information, and institutional repository items. Roy Tennant called it a "next-gen" catalogue system to watch.

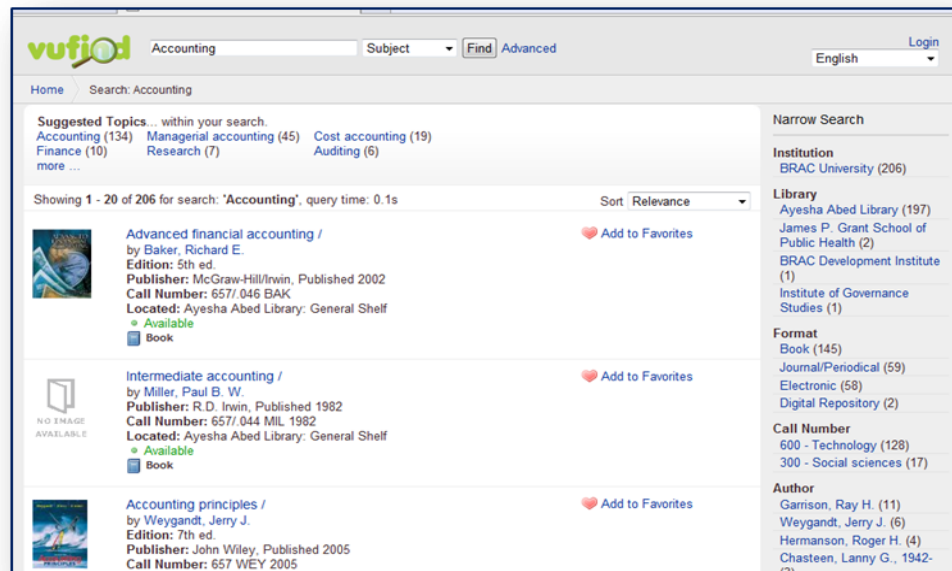
VuFind can pull in bibliographic information from Wikipedia to give context to author searches in the catalogue and can display book review like Amazon on individual item records.

#### **Origin:**

VuFind is written in PHP and uses the search engine Solr to index MARC records. It was created by Andrew Nagy at Villanova University in 2007 to work with their Voyager system, and has since grown into a world-wide software project that can be placed in front of many different ILSes. As of November 2010 some of the libraries testing and/or using VuFind include the National Library of Australia, Stanford, Yale and Georgia Tech. The first Open Source Discovery Tool Project in Bangladesh VuFind was launched January 2011.

#### **3.2.1 Evaluating features of VuFind:**

VuFind's most compelling feature for users is its narrowing facets. Antelman et al. (2006) explains facets as dimensions by which a user can explore the results of a search. Facets can include things such as LC classification, subject, era, language, and author. VuFind's facets include format, call number, topic, author, language, genre, era, and region. When a search result is displayed, these facets are not included in the result sets but are displayed as lists in the default right column. Each item in the list displays with the number of search results associated with it. Default facets in a generic implementation of VuFind are shown in Figure 1 on next page.



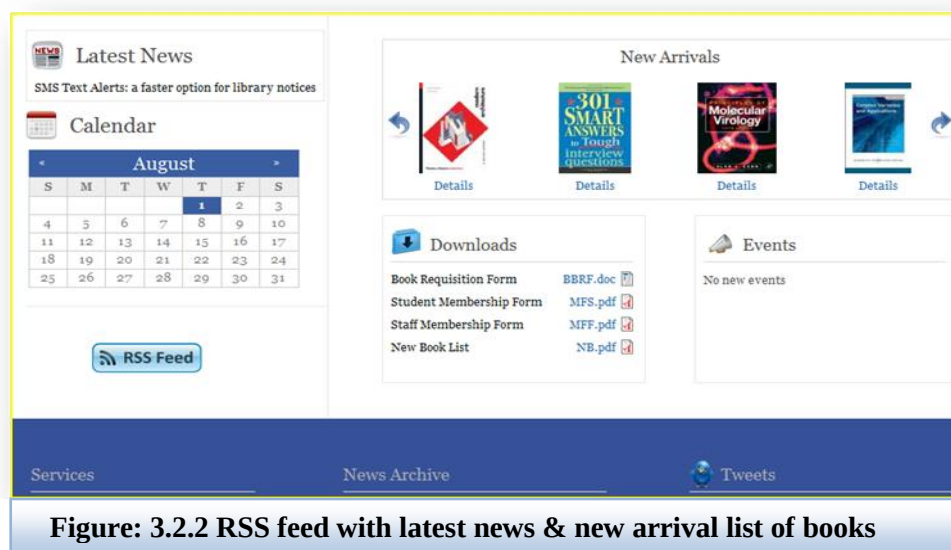
**Figure 3.2.1 A basic search result displayed in VuFind Showing some of VuFind features.**

### Single point of entry for all library resources:

The interface of VuFind is a single search or federated search for all library materials, including pointers to the articles in electronic databases, as well as records of books and digital collections. One search should retrieve all relevant materials. One has to search the catalogue for books, databases for journal articles, and digital collections and institutional repository for local images and materials.

### RSS feeds:

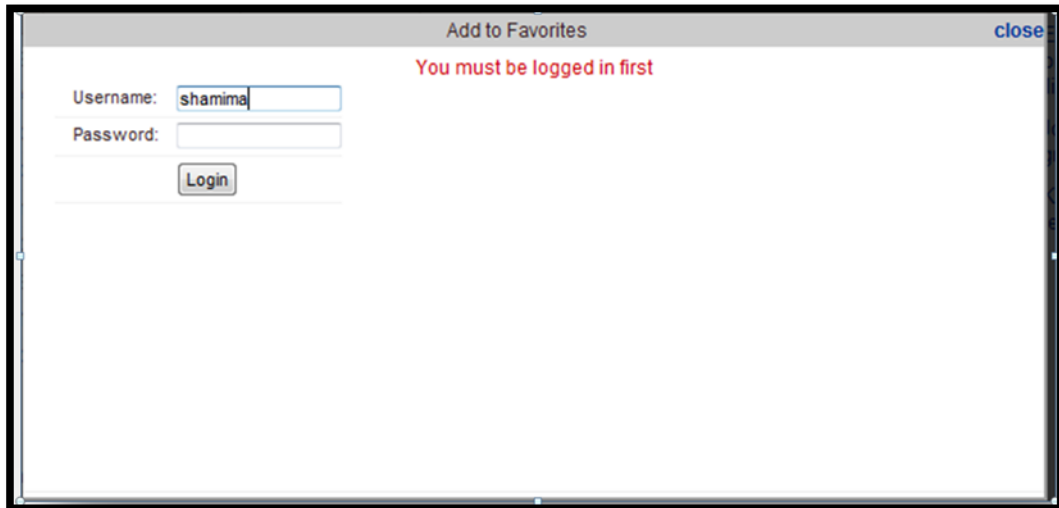
Really simple syndication (RSS) is a way to brief users about frequently updated content on a web site. RSS feeds can be configured to send things such as new book lists, top-circulating book lists, or news to users who subscribe.



**Figure: 3.2.2 RSS feed with latest news & new arrival list of books**

### Enriched content:

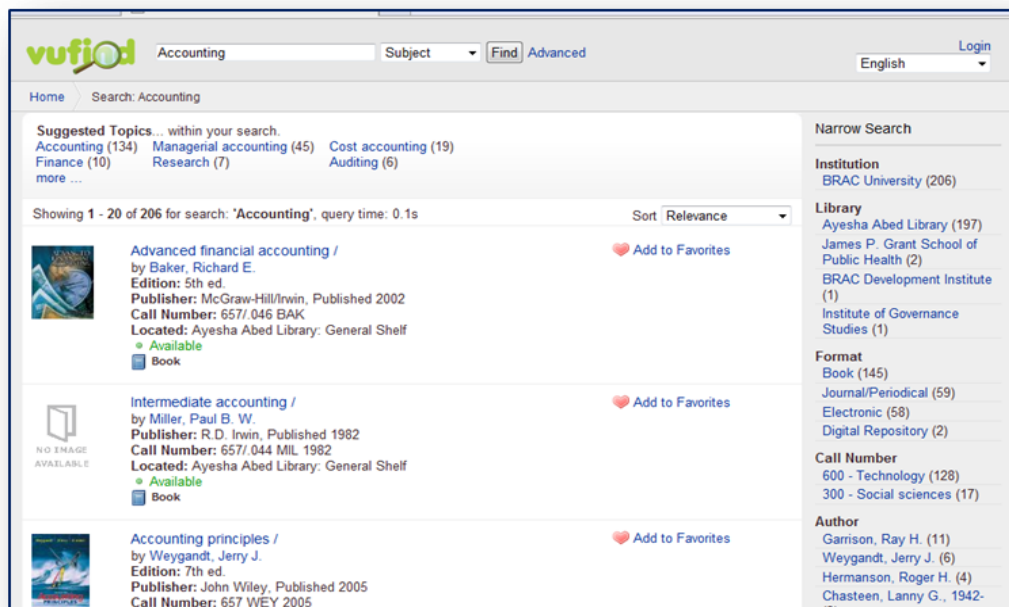
VuFind interface include book cover images and user-driven input, such as comments, descriptions, ratings, and tag clouds. The enriched content can be either from library patrons, outside sources, or both. But unlike OPAC, VuFind requires logging ID to add item to favorite.



**Figure: 3.2.3 Add to favorite required login**

### Faceted navigation:

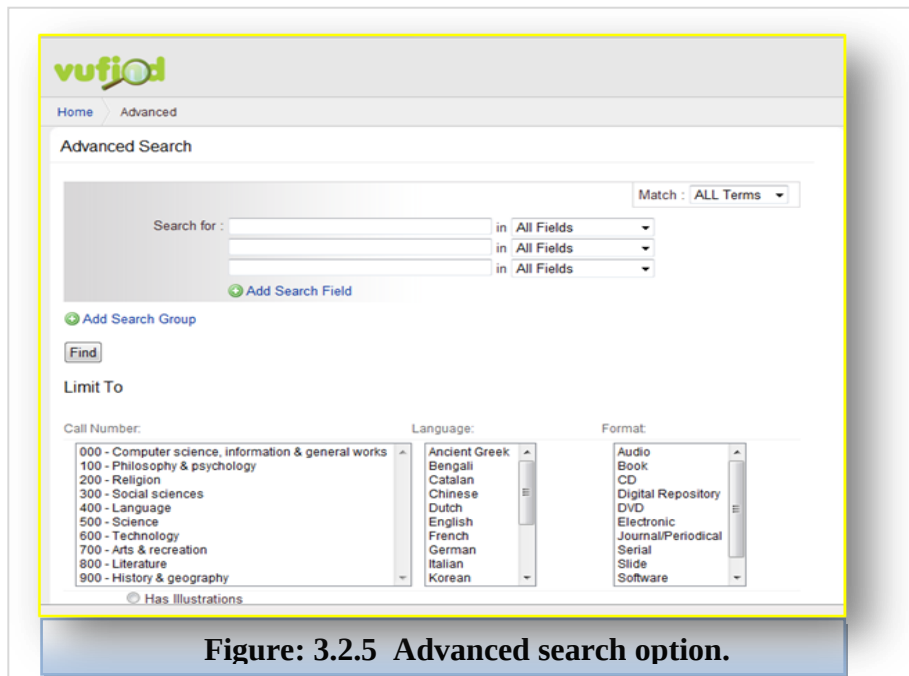
Library catalogs, VuFind is able to display the search results as sets of categories, such as subject terms, dates, languages, availability, formats, locations, and call number etc. Faceted navigation is the ability to narrow down a search by choosing from these facets.



**Figure: 3.2.4 Search result with format, availability, & call number.**

### Simple keyword search box with a link to advanced search:

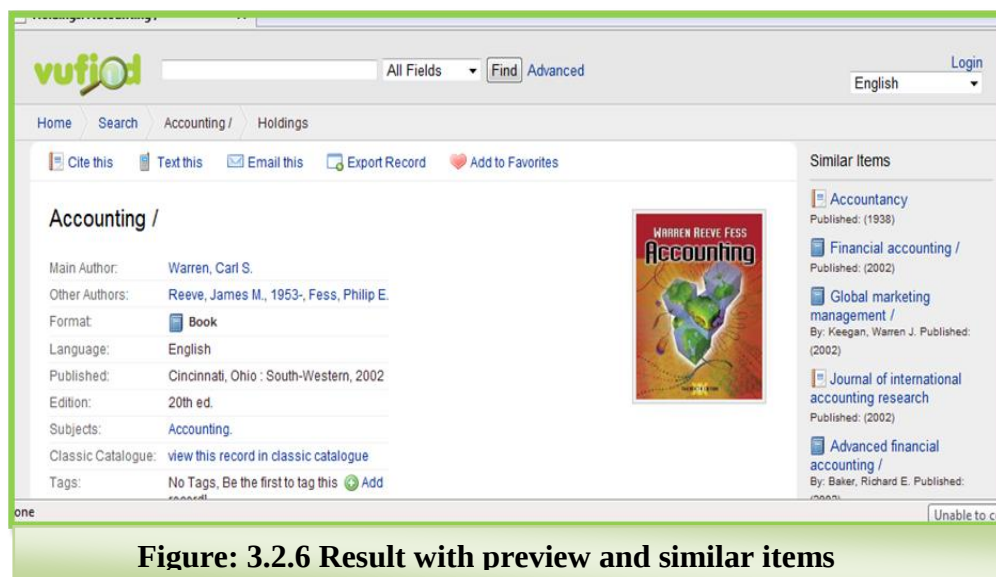
VuFind offers a simple keyword search box that looks like that of Google or Amazon. And a link to the advanced search is present when a user feels the need to use it. This feature is considered to be one of the important characteristics of library catalogue. Students prefer an advanced search and feel that the quick search is more likely to produce results with less precision.



**Figure: 3.2.5 Advanced search option.**

### “Similar items” list:

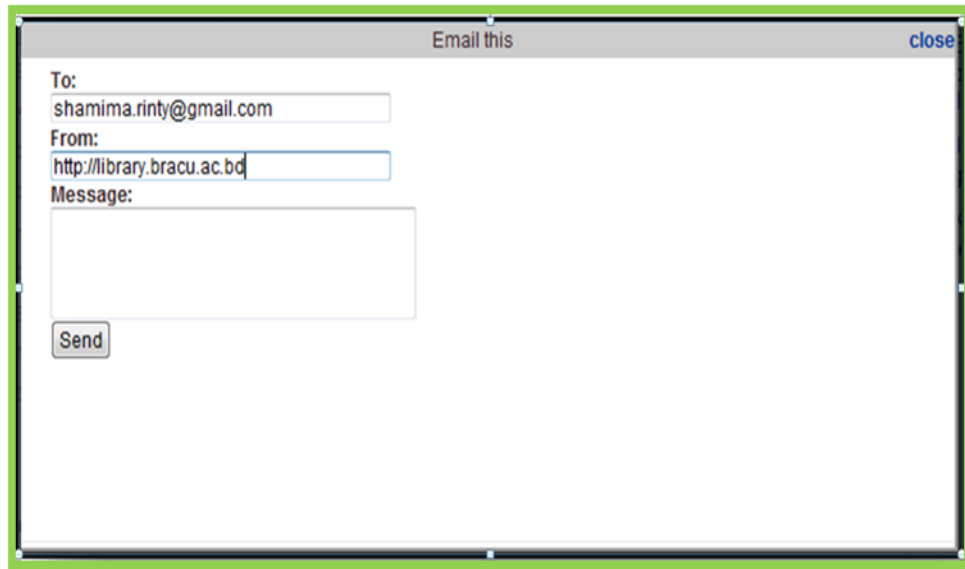
Another feature of VuFind is the “similar items” list. At the individual record level, similar items are displayed based on the item title.



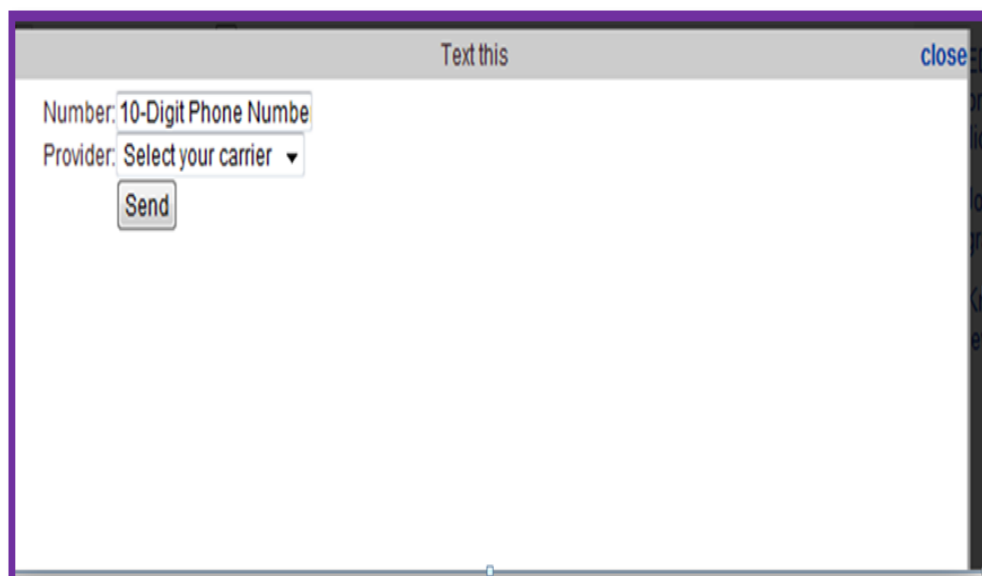
**Figure: 3.2.6 Result with preview and similar items**

### Tagging & texting search result:

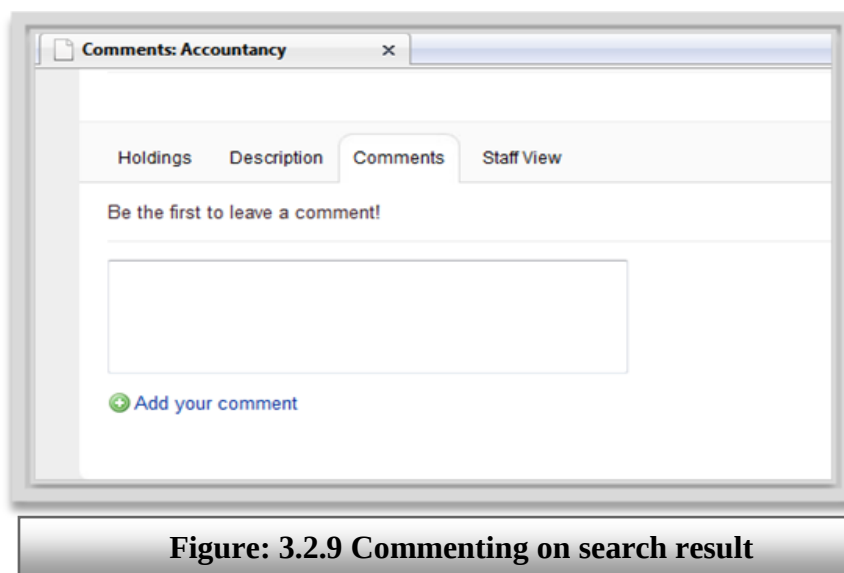
VuFind allows tagging, commenting, keeping a list of favorites, and sending search results as text messages or email. Most of the students were using the tagging feature and very few used the comments, favorites and texting.



**Figure: 3.2.7 Emailing search result.**



**Figure: 3.2.8 Sending search result as text message.**



**Figure: 3.2.9 Commenting on search result**

### Relevancy:

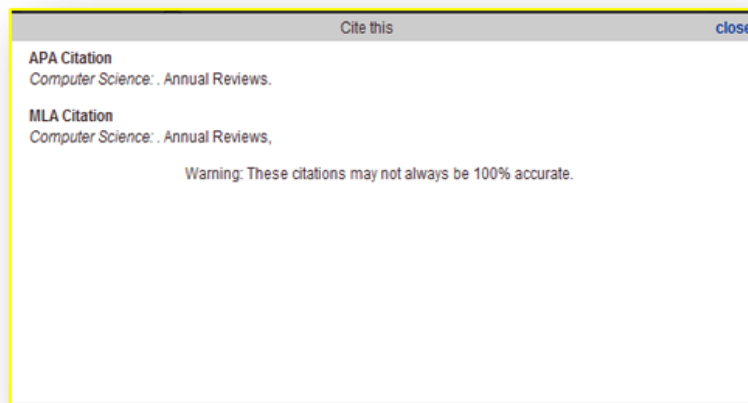
Librarians complain that OPAC relevancy results are problematic. Circulation statistics should join the relevancy results criteria. More frequently circulated books indicate popularity and usefulness, and they should be ranked higher on the top of the display. Items deemed important enough to have multiple copies should also receive higher relevancy ranking .VuFind's relevancy rankings are adjustable so that each institution can customize the ordering of search results. The interface is also available in multiple languages.

### Did you mean . . . ?:

Spell-checking is placed in VuFind. When an error appears in the search, it should pop up the query with the correct spelling or suggest a list of terms so that users can simply click on one of them to get the search results.

### Create citation:

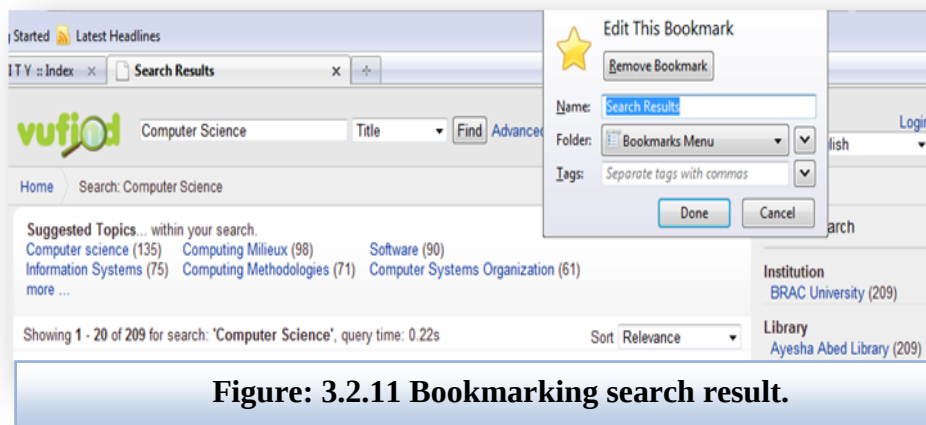
One of most important features of VuFind is that it helps to crate citation. Users can use both MLA (Modern Language Association) and APA (American Psychological Association) style to cite the required document.



**Figure: 3.2.10 Create Citation.**

### Bookmarking search result:

There is an option exist in VuFind to bookmark search results for further reading.



**Figure: 3.2.11 Bookmarking search result.**

# CHAPTER - 4

## RESEARCH DESIGN AND METHODOLOGY



## **4.0 RESEARCH DESIGN AND METHODOLOGY:**

### **4.1 INTRODUCTION:**

This chapter discusses the research design which is conducted by means of a questionnaire survey because this makes it relatively easy to study the perception and opinion of a large group of people in a limited time and at a low cost.

### **4.2 METHODOLOGY OF THE STUDY:**

This report is a qualitative research in nature and it administered by collecting both primary and secondary data. It has tried to use both the primary and secondary sources of collecting information and some are to make the report presentable with as less abstraction as possible

#### **4.2.1 Data Source:**

In order to attain the objective of the study in this report all-necessary information are prepared by collecting both primary & secondary sources of data. These are:

- ✚ **Primary Sources:** Primary data are collected directly through Open-ended & Close ended questionnaire survey via face-to-face interaction. It is the systematic collection of information directly from respondents.
- ✚ **Secondary Sources:** Some secondary data collected to make the report more concrete. These data has been collected from different books, journal articles, web site, with combination of all those sources.

#### **4.2.2 Data Collection Procedure:**

- ✚ **Secondary Data:** The secondary data are collect through the several reports, web site, and book, journal articles.
- ✚ **Primary data:** Filling-out the questionnaire by the students of BRAC University.

#### **4.2.3 Questionnaire Design:**

The questionnaire is developed with the combination of close-ended, open-ended, and multiple-choice questions. For close-ended questions was used where the respondent will choose one option among several possible alternatives, and for open-ended questions are

used to write down any opinion, complain, and feelings. The length of questionnaire is 6 (six) pages (A4 size paper). Multiple-choice questions are used where the respondent will choose more than one option among several possible alternatives. A printed form of Questionnaire was used among the students of BRAC University to collect their perception about Traditional OPAC and VuFind. An online version of the same questionnaire was used to collect data from the students. The Uniform Resource Locator (URL) to the questionnaire was distributed to students through their emails. The questionnaire consisted of following elements:

**Section A:**

- + Demographic and academic information such as department, gender, age and academic year etc.
- + Experience of computer use, frequency of Internet use and use library website.

**Section B:**

- + Student's awareness about traditional OPAC and VuFind.

**Section C:**

Students' satisfaction with OPAC on terminological clarity, screen design, navigation, learning and overall reactions to the OPAC;

- + Their intention to use OPAC.

**Section D:**

- + Students' satisfaction with VuFind on terminological clarity, usability, screen design, navigation, and overall reactions to the VuFind
- + Their intention to use VuFind.

For the category (C,D) above, students were asked to evaluate each questionnaire item from 1 - 'lowest' to 7 - 'highest', corresponding to a 7-point Likert scale.

**4.2.4 Sampling plan:**

Among the public and private universities in Bangladesh only BRAC University has successfully incorporated classic catalogue (OPAC) and discovery tool (VuFind) simultaneously in their library website. Therefore the students of BRAC University are considered as the sample of the research.

- **Population:** The population of my survey are the students of BRAC University.
- **Sample Elements:** BRAC University currently has 3029 enrolled students'. The sample elements of my survey should be determined as the 10% of the total population. But due to the time limitation the sample size was 175 students who regularly use the library.
- **Sampling Procedure:** In data collection procedures, the non probability convenience sampling method is used.
- **Sample Size:** The total sample size for the study is 175 are BRAC University students'.
- **Data collection/field work:** The questionnaire survey was administrated in different department's students of BRAC University.

#### **4.3 Variables studied:**

The following variables were examined to determine student's preference for online catalogue search, Discovery tools vs traditional OPAC interface.

##### **4.3.1 The independent variables:**

This study covered independent variables such as gender and age group, Computer use and Computer Knowledge of the students to survey.

##### **4.3.2 The dependent variables:**

The dependent variables studied are the use of interfaces by the students.

#### **4.4 Data analysis techniques:**

The quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS). The frequency counts were performed on data to obtain the descriptive measures.

##### **4.4.1 Frequency Counts:**

The frequency counts were performed on data to obtain the descriptive measures such as responding students shown in the next page:

- Department
- Level of study
- Gender aspect
- Age group
- Computer use
- Experience of computer use
- Awareness of OPAC
- Use of Interface

#### **4.4.2 Mean and SD (Standard Deviation) calculation:**

1. Mean and SD of Students opinion on overall satisfaction of OPAC
2. Mean and SD of Students opinion on overall satisfaction of VuFind
3. Mean and SD of Students opinion on overall satisfaction of Both OPAC
4. Mean and SD of Students opinion on overall satisfaction of Both VuFind

#### **4.4.3 Mann-Whitney U-test:**

The most common nonparametric statistical test for unrelated samples of scores is the Mann-Whitney *U*-test. This test is used for similar research design as the independent *t*-test. In other words, it can be used on two groups of scores that are independent of each other. The null hypothesis tested by the Mann-Whitney *U*-test is that there is no difference between the two groups in terms of location, focusing on the median as a measure of central tendency. This test was conducted to determine the differences between male and female users in terms of their opinions on interfaces.

The following tests were performed:

1. Mann-Whitney test for difference between gender and overall satisfaction to OPAC.

2. Mann-Whitney test for difference between gender and overall satisfaction to Vufind.
3. Mann-Whitney test for difference between gender and overall satisfaction to Both (OPAC) interface.
4. Mann-Whitney test for difference between gender and overall satisfaction to Both (Vufind) interface.

#### **4.4.4 Kruskal-Wallis test**

The most common non-parametric statistical test for unrelated samples of scores is Kruskal-Wallis test. This test is also used for similar research design as the independent *t*-test. In other words, it can be used on more than two groups of scores that are independent of each other. The null hypothesis tested by the Kruskal-Wallis test is that there is no difference between the groups.

The following tests were conducted:

1. Kruskal Wallis test for difference among age groups and overall satisfaction of OPAC.
2. Kruskal Wallis test for difference among age groups and overall satisfaction of Vufind.
3. Kruskal Wallis test for difference among age groups and overall satisfaction of Both (OPAC) interfaces.
4. Kruskal Wallis test for difference among age groups and overall satisfaction of Both (Vufind) interfaces.

#### **4.5 CONCLUSION:**

This chapter describes the research design. The next chapter will discuss the data analysis wherein frequency counts, mean, standard deviation (SD), Mann Whitney test and Kruskal-Wallis test were carried out.

# CHAPTER - 5

## DATA ANALYSIS AND RESULT

Life is a  
library owned  
by an author.  
It has a few  
books which he  
wrote himself,  
but most of  
them were  
written for him.

Harry Emerson Fosdick

## 5.0 DATA ANALYSIS AND RESULT:

This chapter discusses the results of the survey conducted as part of this research. A total of 175 students participated in the survey.

### 5.1 Frequency Counts:

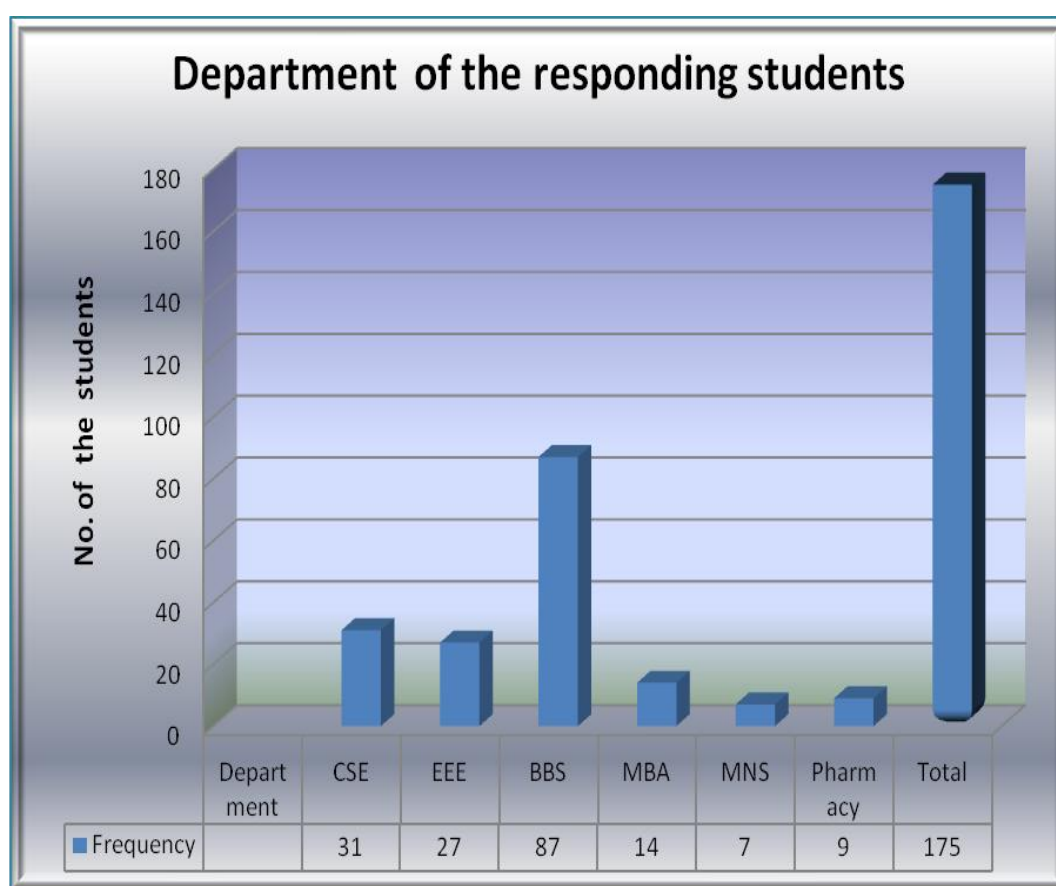
The frequency counts were performed based on the data to attain the descriptive measures.

#### 5.1.1 Department of the respondent:

**Table: 5.1.1 Department of the responding students**

|  | Department   | Frequency  | Percent      |
|--|--------------|------------|--------------|
|  | CSE          | 31         | 17.7         |
|  | EEE          | 27         | 15.4         |
|  | BBS          | 87         | 49.7         |
|  | MBA          | 14         | 8.0          |
|  | MNS          | 7          | 4.0          |
|  | Pharmacy     | 9          | 5.1          |
|  | <b>Total</b> | <b>175</b> | <b>100.0</b> |

From the above information it is clear that the largest group of respondent (87, 49.70%) were from BRAC Business School (BBS) whereas the lowest group (7, 4.00%) was from Mathematics and Natural Science (MNS). Out of 175 students, 31 (17.70%) were from the Department of CSE, 27 (15.40%) were from EEE Department, 18 (10.30%) were from BBA, and the remaining 14 (8.00%) were MBA students.



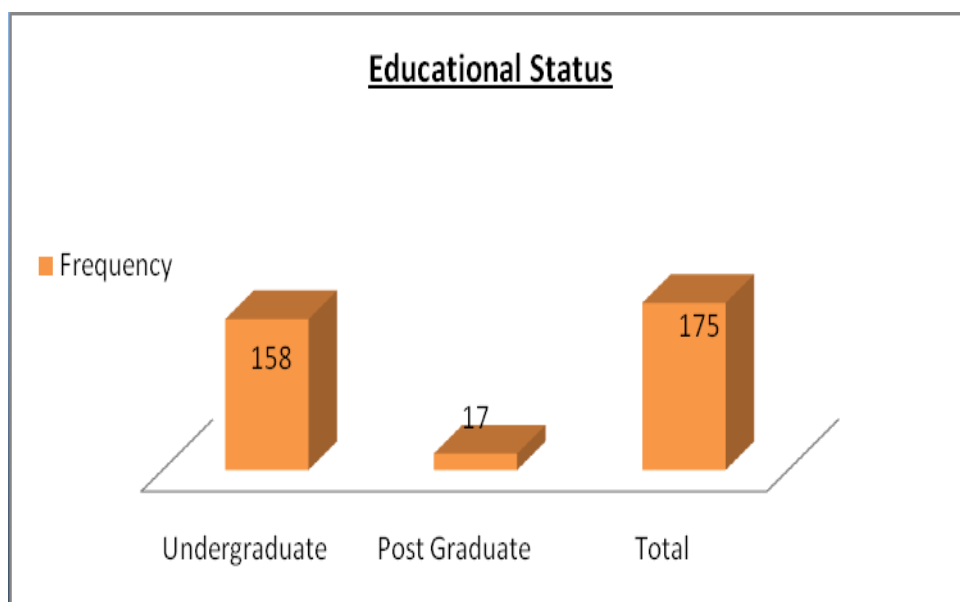
**Figure: 5.1.1 Department of the responding students**

### 5.1.2 Education Status:

**Table: 5.1.2 Educational Status of the responding students**

| Education Status | Frequency  | Percent      |
|------------------|------------|--------------|
| Undergraduate    | 158        | 90.30        |
| Post Graduate    | 17         | 9.70         |
| <b>Total</b>     | <b>175</b> | <b>100.0</b> |

Table 5.1.2 indicates that a significant proportion of students (158, 90.30%) were studying at undergraduate level, and the rest (17, 9.70%) from postgraduate level.



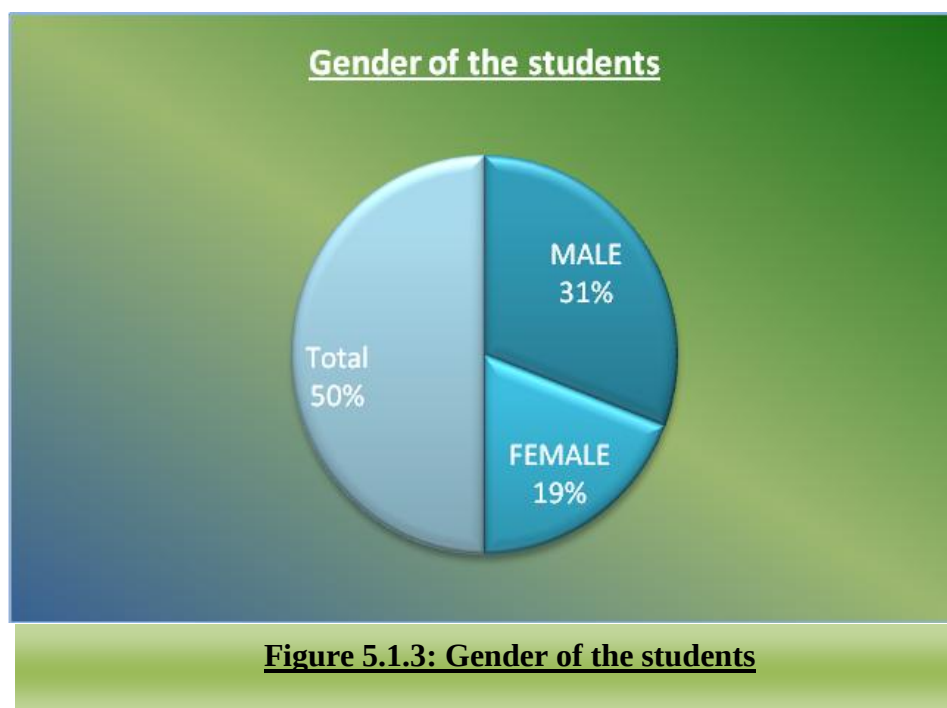
**Figure: 5.1.2 Educational Status of the responding students**

### 5.1.3 Gender:

**Table 5.1.3: Gender of the students**

| Gender       | Frequency  | Percent      |
|--------------|------------|--------------|
| Male         | 108        | 61.7         |
| Female       | 67         | 38.3         |
| <b>Total</b> | <b>175</b> | <b>100.0</b> |

Table 5.1.3 shows that among 175 students, 108 (61.70%) were male and 67 (38.3%) were female. Considering the overall male/female enrollment in the university, this finding suggests a balance between male and female respondents.

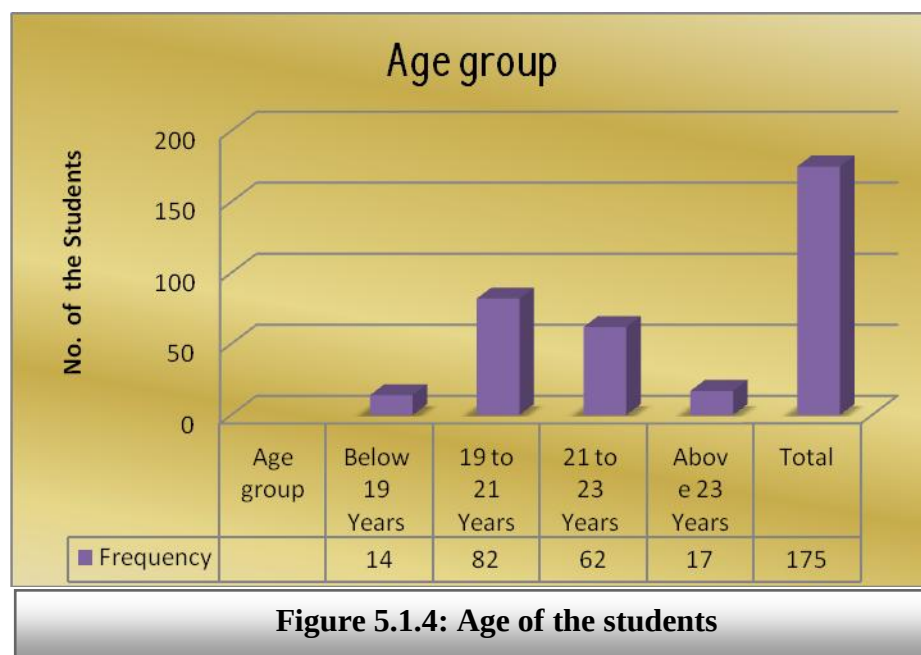


#### 5.1.4 Age Group:

**Table 5.1.4: Age of the students**

| Age group      | Frequency  | Percent      |
|----------------|------------|--------------|
| Below 19 years | 14         | 8.0          |
| 19 to 21 years | 82         | 46.9         |
| 21 to 23 years | 62         | 35.4         |
| Above 23 years | 17         | 9.7          |
| <b>Total</b>   | <b>175</b> | <b>100.0</b> |

In the survey, 90.3% of the respondents were undergraduates (see Table 5.1.2). Therefore, from the Table 5.1.4, it is apparent that the largest group of students 82 (46.90%) comprised of those in the age group of 19-21 years, 62 (35.40%) students were aged between 21 and 23 years. The smallest group of respondents (14, 8.0%) was aged below 19 years; while the remaining 17 (9.70%) were above 23 years.

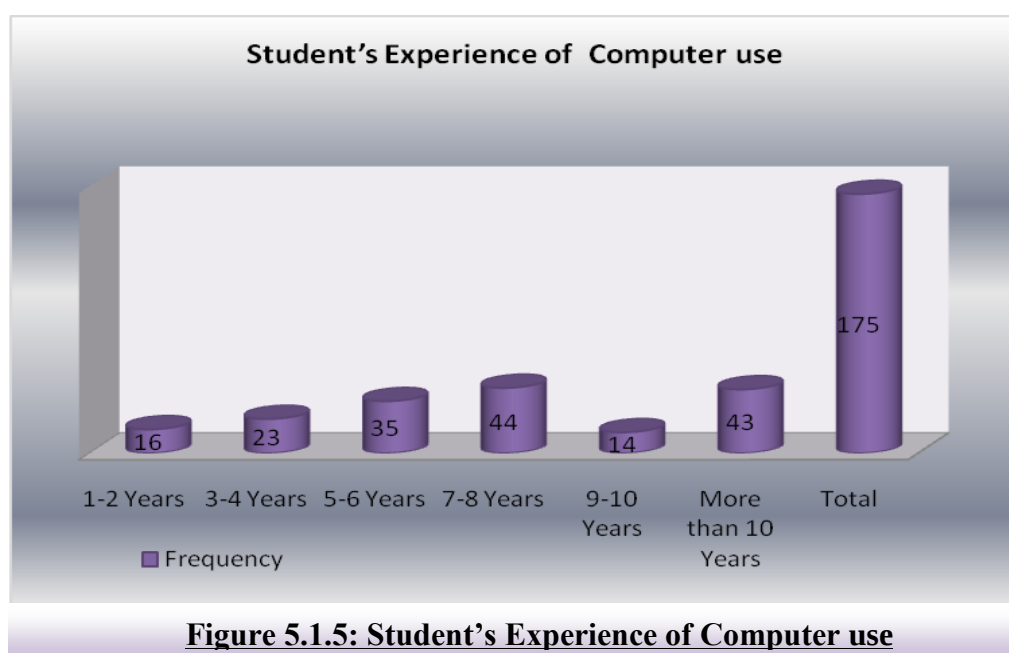


**Figure 5.1.4: Age of the students**

### 5.1.5 Experience of Computer Use:

| Table 5.1.5: Student's Experience of Computer use |            |              |
|---------------------------------------------------|------------|--------------|
| Experience of Computer Use                        | Frequency  | Percent      |
| 1-2 Years                                         | 16         | 9.1          |
| 3-4 Years                                         | 23         | 13.1         |
| 5-6 Years                                         | 35         | 20.0         |
| 7-8 Years                                         | 44         | 25.1         |
| 9-10 Years                                        | 14         | 8.0          |
| More than 10 Years                                | 43         | 24.6         |
| <b>Total</b>                                      | <b>175</b> | <b>100.0</b> |

Table 5.1.5 demonstrates the respondents' experience of computer use. The results suggest that the largest group of students had 7-8 years of computer experience. A moderate number of students (35, 20.00%) students had 5-6 years, and the second largest group of students (43, 24.60%) had been using computer more than ten years, 16 (9.10 %) students had experience of 1-2 years, 23 (13.10%) students had 3-4 years, and the lowest group 14 (8.00%) of students had 9-10 years experience.



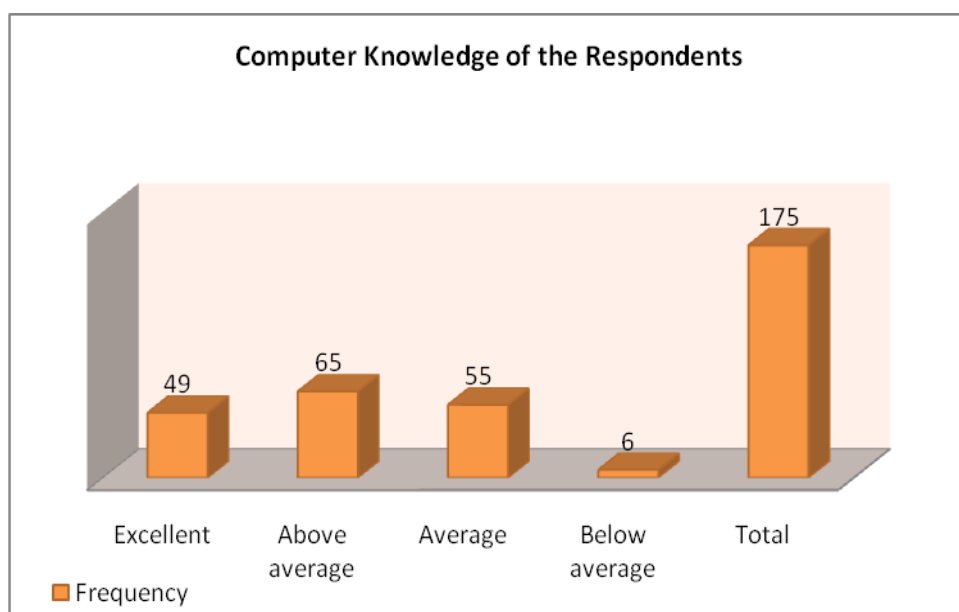
**Figure 5.1.5: Student's Experience of Computer use**

### 5.1.6 Computer Knowledge:

**Table 5.1.6: Computer Knowledge of the Respondents**

| Computer Knowledge | Frequency | Percent |
|--------------------|-----------|---------|
| Excellent          | 49        | 28.0    |
| Above average      | 65        | 37.1    |
| Average            | 55        | 31.4    |
| Below average      | 6         | 3.4     |
|                    | 175       | 100.0   |

The above table illustrates respondents' experience in using computers. The results suggest that the largest group of students (65, 37.10%) had above average experience in using computer. The lowest group (6, 3.40%) had below average experience. Table 5.1.5 demonstrates that most of the students were using computer more than five years. Therefore, (49, 28.00%) students had outstanding computer knowledge and (55, 31.40%) students had an average experience in using computer.



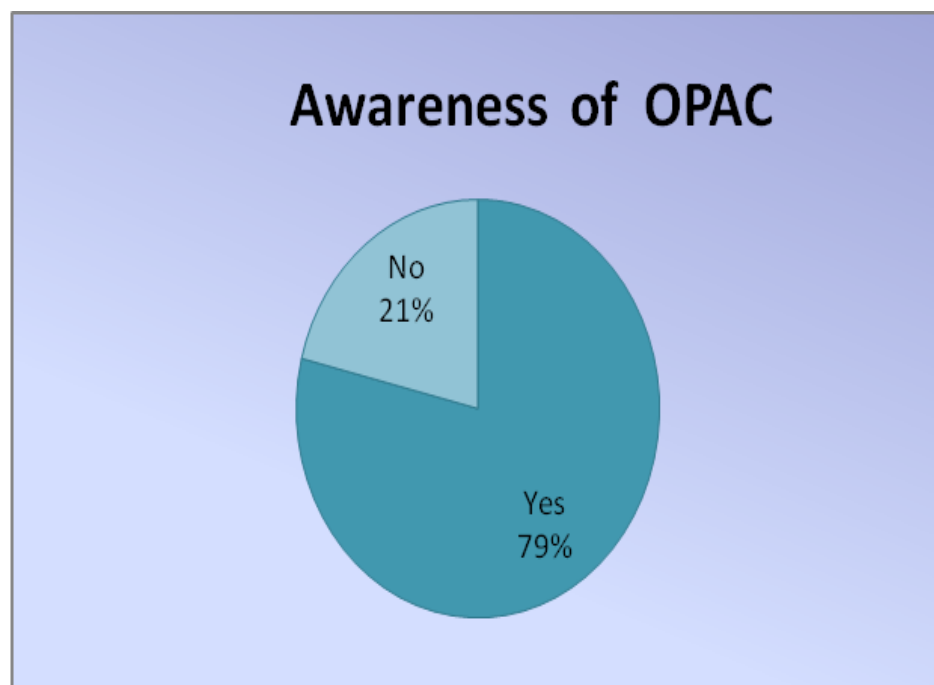
**Figure 5.1.6: Computer Knowledge of the Respondents**

### 5.1.7: Awareness of OPAC

**Table 5.1.7: Awareness of Traditional OPAC**

| Awareness about OPAC | Frequency  | Percent      |
|----------------------|------------|--------------|
| Yes                  | 138        | 78.9         |
| No                   | 37         | 21.1         |
| <b>Total</b>         | <b>175</b> | <b>100.0</b> |

Table indicates that 138 (78.90%) students were aware of their University Library's Online Public Access Catalogue (OPAC), whereas 37 (21.1%) students did not know about its existence. This suggests that a significant proportion of students were informed about it.



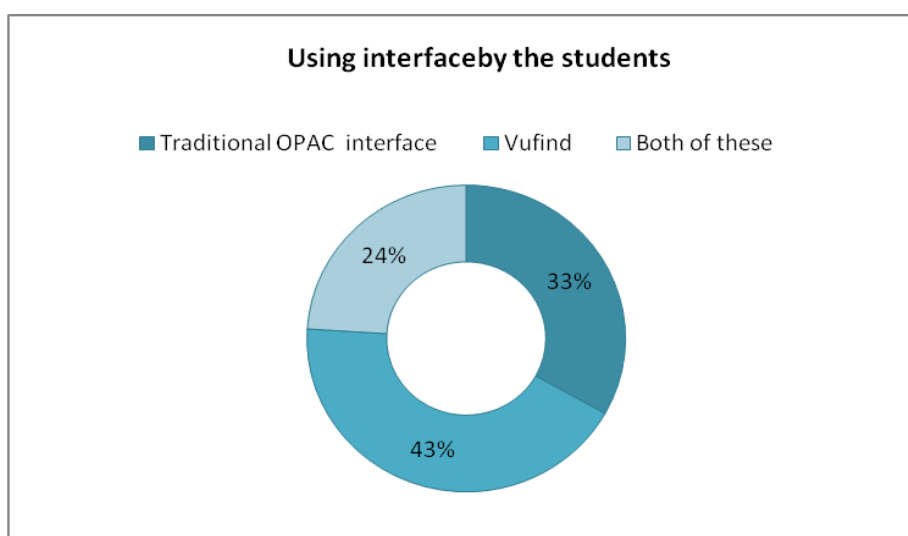
**Figure 5.1.7: Awareness of Traditional OPAC**

### 5.1.8: Users' preferable Interface to use.

**Table 5.1.8: Using Interface for locating library resource**

| Using interface            | Frequency  | Percent      |
|----------------------------|------------|--------------|
| Traditional OPAC interface | 58         | 33.1         |
| VuFind                     | 75         | 42.9         |
| Both of these              | 42         | 24.0         |
| <b>Total</b>               | <b>175</b> | <b>100.0</b> |

The above table illustrates the interface for locating library resources. Although both the traditional OPAC and VuFind are available in Aysha Abed Library (BRAC University), but from the table it is clear only (42, 24.00%) student use both interface. A large group of students (75, 42.90%) use only VuFind and the rest (58, 33.1%) use the OPAC interface alone.



**Figure 5.1.8: Using Interface for locating library resource**

## **5.2. Mean and Standard Deviation:**

### **5.2.1 Mean and SD of Students' overall reactions to OPAC**

**Table 5.2.1 Mean and SD of Students' overall reactions on OPAC**

| Variable                    | Mean | SD   |
|-----------------------------|------|------|
| Terrible vs. Wonderful      | 4.29 | 1.19 |
| Unimpressive vs. impressive | 4.44 | 1.29 |
| Difficult vs. Easy          | 4.80 | 1.27 |
| Inefficient vs. efficient   | 4.73 | 1.28 |
| Useless vs. useful          | 4.96 | 1.27 |
| Unfriendly vs. friendly     | 4.79 | 1.35 |
| Frustrating vs. satisfying  | 4.69 | 1.34 |
| Ineffective vs. powerful    | 4.41 | 1.19 |
| Dull vs. stimulating        | 4.43 | 1.28 |
| Rigid vs. flexible          | 4.77 | 1.31 |

Table 5.2.1 reveals the overall reactions to OPAC by students. They seem generally satisfied with the current OPAC interface as all scores are above 4, i.e. the average score on a 7-point scale. However, none of the scores fell above 5, which mean the interface requires improvement specially in terms of making it more interesting to students.

### 5.2.2 Mean and SD of students' overall reactions on VuFind

**Table 5.2.2 Mean and SD of students' overall reactions to VuFind**

| Variable                    | Mean | SD   |
|-----------------------------|------|------|
| Terrible vs. Wonderful      | 4.97 | 1.25 |
| Unimpressive vs. impressive | 5.09 | 1.04 |
| Difficult vs. Easy          | 5.05 | 1.16 |
| Inefficient vs. efficient   | 5.18 | 1.13 |
| Useless vs. useful          | 5.37 | 1.22 |
| Unfriendly vs. friendly     | 5.28 | 1.22 |
| Frustrating vs. satisfying  | 5.21 | 1.08 |
| Ineffective vs. powerful    | 5.18 | 1.04 |
| Dull vs. stimulating        | 5.27 | 1.02 |
| Rigid vs. flexible          | 5.32 | 1.05 |

Table 5.2.2 reveals the overall reactions to VuFind by students. They seem generally highly satisfied with the current VuFind as all scores fell above 5 on a 7-point scale. It reveals that the interface is more interesting to students.

### 5.2.3: Mean and SD of Students' overall reactions to Both (OPAC)

**Table 5.2.3: Mean and SD of Students' overall reactions on Both (OPAC)**

| Variable                    | Mean | SD   |
|-----------------------------|------|------|
| Terrible vs. Wonderful      | 4.36 | 1.01 |
| Unimpressive vs. impressive | 4.47 | .943 |
| Difficult vs. Easy          | 4.52 | 1.25 |
| Inefficient vs. efficient   | 4.50 | 1.02 |
| Useless vs. useful          | 4.67 | 1.28 |
| Unfriendly vs. friendly     | 4.76 | 1.38 |
| Frustrating vs. satisfying  | 4.43 | 1.13 |
| Ineffective vs. powerful    | 4.79 | 1.03 |
| Dull vs. stimulating        | 4.62 | 1.27 |
| Rigid vs. flexible          | 4.74 | 1.19 |

#### 5.2.4 Mean and SD of Students' overall reactions to Both (VuFind)

**Table 5.2.4 Mean and SD of Students' overall reactions on Both (VuFind)**

| Variable                    | Mean | SD   |
|-----------------------------|------|------|
| Terrible vs. Wonderful      | 4.85 | 1.24 |
| Unimpressive vs. impressive | 5.09 | 1.05 |
| Difficult vs. Easy          | 4.81 | 1.13 |
| Inefficient vs. efficient   | 5.21 | 1.09 |
| Useless vs. useful          | 5.19 | 1.15 |
| Unfriendly vs. friendly     | 5.02 | 1.18 |
| Frustrating vs. satisfying  | 5.09 | 1.26 |
| Ineffective vs. powerful    | 4.97 | 1.18 |
| Dull vs. stimulating        | 5.00 | 1.19 |
| Rigid vs. flexible          | 5.17 | 1.27 |

Table 5.2.3 and 5.2.4 reveal the overall reactions to OPAC and VuFind by students using both interfaces. It seems they are not highly satisfied by using both the current OPAC and VuFind, as most scores fell below 5 on a 7-point scale. A few scores, however, fell below 5 which mean these interfaces require improvement.

### 5.3 Hypotheses

In order to analyze the influence of demographic characteristics on overall satisfaction with using OPAC and VuFind, the following null hypotheses were tested:

|    |                                                                                                                                                    |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------|
| H1 | There is no significant difference between male and female students in terms of their opinions on overall satisfaction with OPAC, VuFind, or Both  |
| H2 | There is no significant difference between male and female students in terms of their opinions on overall satisfaction with OPAC, VuFind, or Both. |
| H3 | There is no significant difference among age groups in their opinions on overall satisfaction with the OPAC, VuFind, or Both.                      |
| H4 | There is no significant difference among students having varied knowledge of computer in their opinion on interfaces overall quality.              |

## 5.4. Mann-Whitney Test

### 5.4.1: Mann-Whitney Test for difference between Gender and Overall satisfaction with OPAC.

**Table 5.4.1: Mann-Whitney Test for difference between Gender and Overall satisfaction with OPAC**

| Variable                    | Mann-Whitney U | Wilcoxon W | Z      | Asymp. Sig. (2-tailed) |
|-----------------------------|----------------|------------|--------|------------------------|
| Terrible vs. Wonderful      | 863.000        | 2.403E3    | -.161  | .872                   |
| Unimpressive vs. impressive | 835.500        | 1331.500   | -.159  | .874                   |
| Difficult vs. Easy          | 783.000        | 1.279E3    | -.512  | .609                   |
| Inefficient vs. efficient   | 769.000        | 2.254E3    | -.642  | .521                   |
| Useless vs. useful          | 805.000        | 2.290E3    | -.300  | .764                   |
| Unfriendly vs. friendly     | 675.000        | 1.171E3    | -1.523 | .128                   |
| Frustrating vs. satisfying  | 707.500        | 2.192E3    | -1.216 | .224                   |
| Ineffective vs. powerful    | 834.000        | 2.319E3    | -.028  | .977                   |
| Dull vs. stimulating        | 739.500        | 1.236E3    | -.921  | .357                   |
| Rigid vs. flexible          | 620.500        | 1.056E3    | -1.606 | .108                   |

**Notes: \* significant at  $P < 0.05$**

In Table 5.4.1, the Mann-Whitney test showed that there was no significant difference between male and female respondents in terms of their opinion on overall quality of the OPAC.

#### 5.4.2 Mann-Whitney Test for difference between Gender and Overall satisfaction with VuFind.

**Table 5.4.2 Mann-Whitney Test for difference between Gender and Overall satisfaction with VuFind**

| Variable                    | Mann-Whitney U | Wilcoxon W | Z      | Asymp. Sig. (2-tailed) |
|-----------------------------|----------------|------------|--------|------------------------|
| Terrible vs. Wonderful      | 1.111E3        | 3.127E3    | -.401  | .689                   |
| Unimpressive vs. impressive | 1043.000       | 3059.000   | -.914  | .361                   |
| Difficult vs. Easy          | 1.109E3        | 1.812E3    | -.285  | .776                   |
| Inefficient vs. efficient   | 1.084E3        | 1.787E3    | -.478  | .633                   |
| Useless vs. useful          | 1026.500       | 2979.500   | -.902  | .367                   |
| Unfriendly vs. friendly     | 1.053E3        | 1.756E3    | -.702  | .483                   |
| Frustrating vs. satisfying  | 1.110E3        | 3.062E3    | -.284  | .777                   |
| Ineffective vs. powerful    | 778.000        | 1.481E3    | -2.782 | .005 *                 |
| Dull vs. stimulating        | 1.080E3        | 3.033E3    | -.500  | .617                   |
| Rigid vs. flexible          | 1.091E3        | 1.794E3    | -.422  | .673                   |

**Notes: \* significant at  $P < 0.05$**

Table 5.4.2, showed that there was no significant difference between male and female respondents in terms of their opinion on overall quality of the VuFind, except in the area 'Ineffective vs. Powerful'.

### 5.4.3: Mann-Whitney Test for difference between Gender and Overall satisfaction with both (OPAC).

**Table 5.4.3: Mann-Whitney Test for difference between Gender and Overall satisfaction with both (OPAC)**

| Variable                    | Mann-Whitney U | Wilcoxon W | Z      | Asymp. Sig. (2-tailed) |
|-----------------------------|----------------|------------|--------|------------------------|
| Terrible vs. Wonderful      | 189.000        | 309.000    | -.376  | .707                   |
| Unimpressive vs. impressive | 175.500        | 553.500    | -.749  | .454                   |
| Difficult vs. Easy          | 200.000        | 578.000    | -.069  | .945                   |
| Inefficient vs. efficient   | 152.000        | 530.000    | -1.429 | .153                   |
| Useless vs. useful          | 198.000        | 576.000    | -.122  | .903                   |
| Unfriendly vs. friendly     | 176.500        | 554.500    | -.700  | .484                   |
| Frustrating vs. satisfying  | 172.000        | 550.000    | -.828  | .407                   |
| Ineffective vs. powerful    | 179.500        | 557.500    | -.639  | .523                   |
| Dull vs. stimulating        | 195.500        | 315.500    | -.190  | .849                   |
| Rigid vs. flexible          | 182.000        | 302.000    | -.567  | .570                   |

**Notes: \* significant at  $P < 0.05$**

From Table 5.4.3, it is clear that there was no significant difference between male and female respondents in terms of their opinion on overall quality of both (OPAC) interface.

#### 5.4.4: Mann-Whitney Test for difference between Gender and Overall satisfaction with both (VuFind).

**Table 5.4.4: Mann-Whitney Test for difference between Gender and Overall satisfaction with both (VuFind)**

| Variable                    | Mann-Whitney U | Wilcoxon W | Z      | Asymp. Sig. (2-tailed) |
|-----------------------------|----------------|------------|--------|------------------------|
| Terrible vs. Wonderful      | 198.500        | 576.500    | -.109  | .913                   |
| Unimpressive vs. impressive | 173.500        | 551.500    | -.793  | .428                   |
| Difficult vs. Easy          | 202.500        | 322.500    | .000   | 1.000                  |
| Inefficient vs. efficient   | 124.500        | 244.500    | -2.120 | .034 *                 |
| Useless vs. useful          | 140.500        | 260.500    | -1.691 | .091                   |
| Unfriendly vs. friendly     | 197.500        | 317.500    | -.137  | .891                   |
| Frustrating vs. satisfying  | 172.500        | 550.500    | -.810  | .418                   |
| Ineffective vs. powerful    | 167.000        | 287.000    | -.969  | .333                   |
| Dull vs. stimulating        | 147.500        | 267.500    | -1.495 | .135                   |
| Rigid vs. flexible          | 159.500        | 279.500    | -1.170 | .242                   |

**Notes: \* significant at  $P < 0.05$**

Table 5.4.4 showed that there was no significant difference between male and female respondents in terms of their opinion on overall quality of both (VuFind) interface except the area 'Inefficient vs. Efficient.

## 5.5 Kruskal-Wallis Test

### 5.5.1 Kruskal-Wallis Test for difference among Age groups and Overall satisfaction with OPAC

**Table 5.5.1 Kruskal-Wallis Test for difference among Age groups and Overall satisfaction with OPAC**

| Variable                    | Chi-Square | df | Asymp. Sig. |
|-----------------------------|------------|----|-------------|
| Terrible vs. Wonderful      | 8.264      | 3  | .041 *      |
| Unimpressive vs. impressive | 1.158      | 3  | .763        |
| Difficult vs. Easy          | .634       | 3  | .888        |
| Inefficient vs. efficient   | 3.403      | 3  | .334        |
| Useless vs. useful          | .520       | 3  | .915        |
| Unfriendly vs. friendly     | 5.741      | 3  | .125        |
| Frustrating vs. satisfying  | 1.269      | 3  | .737        |
| Ineffective vs. powerful    | 3.106      | 3  | .375        |
| Dull vs. stimulating        | 3.191      | 3  | .363        |
| Rigid vs. flexible          | 3.684      | 3  | .298        |

Notes: \* significant at  $P < 0.05$

From Table 5.5.1, the result of Kruskal-Wallis test showed that there was no significant difference among the students from different age groups in terms of their opinion on overall quality of OPAC, except in the area 'terrible vs. wonderful'.

### 5.5.2: Kruskal-Wallis Test for difference among Computer Use and Overall satisfaction with OPAC

**Table 5.5.2: Kruskal-Wallis Test for difference among Computer Use and Overall satisfaction with OPAC**

| Variable                    | Chi-Square | df | Asymp. Sig. |
|-----------------------------|------------|----|-------------|
| Terrible vs. Wonderful      | 1.802      | 5  | .876        |
| Unimpressive vs. impressive | 4.743      | 5  | .448        |
| Difficult vs. Easy          | 7.429      | 5  | .191        |
| Inefficient vs. efficient   | 2.662      | 5  | .752        |
| Useless vs. useful          | 5.365      | 5  | .373        |
| Unfriendly vs. friendly     | 2.546      | 5  | .770        |
| Frustrating vs. satisfying  | 2.342      | 5  | .800        |
| Ineffective vs. powerful    | .930       | 5  | .968        |
| Dull vs. stimulating        | 2.992      | 5  | .701        |
| Rigid vs. flexible          | 7.477      | 5  | .188        |

**Notes: \* significant at  $P < 0.05$**

From Table 5.5.2, the result of Kruskal-Wallis test showed that there was no significant difference among the students possessing different years of computer use and their opinion on overall quality of OPAC.

### 5.5.3: Kruskal-Wallis Test for difference among Computer knowledge and Overall satisfaction with OPAC.

**Table 5.5.3: Kruskal-Wallis Test for difference among Computer knowledge and Overall satisfaction with OPAC**

| Variable                    | Chi-Square | df | Asymp. Sig. |
|-----------------------------|------------|----|-------------|
| Terrible vs. Wonderful      | .953       | 3  | .813        |
| Unimpressive vs. impressive | .465       | 3  | .926        |
| Difficult vs. Easy          | 5.101      | 3  | .165        |
| Inefficient vs. efficient   | .078       | 3  | .994        |
| Useless vs. useful          | .868       | 3  | .833        |
| Unfriendly vs. friendly     | 1.759      | 3  | .624        |
| Frustrating vs. satisfying  | .954       | 3  | .812        |
| Ineffective vs. powerful    | .975       | 3  | .807        |
| Dull vs. stimulating        | 1.294      | 3  | .731        |
| Rigid vs. flexible          | 1.044      | 3  | .791        |

**Notes: \* significant at  $P < 0.05$**

From Table 5.5.3, the result of Kruskal-Wallis test showed that there was no significant difference among the students' levels of computer knowledge and their opinion on overall quality of OPAC.

#### 5.5.4: Kruskal-Wallis Test for difference among Age and Overall satisfaction withVuFind

**Table 5.5.4: Kruskal-Wallis Test for difference among Age and Overall satisfaction with VuFind**

| Variable                    | Chi-Square | df | Asymp. Sig. |
|-----------------------------|------------|----|-------------|
| Terrible vs. Wonderful      | 3.484      | 3  | .323        |
| Unimpressive vs. impressive | .155       | 3  | .985        |
| Difficult vs. Easy          | 3.012      | 3  | .390        |
| Inefficient vs. efficient   | 8.615      | 3  | .035 *      |
| Useless vs. useful          | 6.468      | 3  | .091        |
| Unfriendly vs. friendly     | 1.219      | 3  | .749        |
| Frustrating vs. satisfying  | .273       | 3  | .965        |
| Ineffective vs. powerful    | 1.287      | 3  | .732        |
| Dull vs. stimulating        | 5.557      | 3  | .135        |
| Rigid vs. flexible          | .895       | 3  | .827        |

**Notes: \* significant at  $P < 0.05$**

From Table 5.5.4, the result of Kruskal-Wallis test showed that there was no significant difference among the students falling into different age groups in terms of their opinion on overall quality of VuFind, except in the area 'Inefficient vs. Efficient.

### 5.5.5: Kruskal-Wallis Test for difference among Computer Use and Overall satisfaction with VuFind.

**Table 5.5.5: Kruskal-Wallis Test for difference among Computer Use and Overall satisfaction with VuFind**

| Variable                    | Chi-Square | df | Asymp. Sig. |
|-----------------------------|------------|----|-------------|
| Terrible vs. Wonderful      | 9.307      | 5  | .097        |
| Unimpressive vs. impressive | 11.471     | 5  | .043 *      |
| Difficult vs. Easy          | 4.348      | 5  | .500        |
| Inefficient vs. efficient   | 6.987      | 5  | .222        |
| Useless vs. useful          | 3.438      | 5  | .633        |
| Unfriendly vs. friendly     | 9.211      | 5  | .101        |
| Frustrating vs. satisfying  | .302       | 5  | .998        |
| Ineffective vs. powerful    | 1.457      | 5  | .918        |
| Dull vs. stimulating        | 3.349      | 5  | .646        |
| Rigid vs. flexible          | 2.264      | 5  | .812        |

**Notes: \* significant at  $P < 0.05$**

The result of Kruskal-Wallis test (see Table 5.5.5) showed that there was no significant difference among the students possessing different years of using computer and their opinion on overall quality of VuFind, except the area of 'Unimpressive vs. Impressive'

**Table 5.5.6: Kruskal-Wallis Test for difference among Computer knowledge and Overall satisfaction with VuFind.**

**Table 5.5.6: Kruskal-Wallis Test for difference among  
Computer knowledge and Overall satisfaction with VuFind**

| Variable                    | Chi-Square | df | Asymp. Sig. |
|-----------------------------|------------|----|-------------|
| Terrible vs. Wonderful      | 1.766      | 3  | .622        |
| Unimpressive vs. impressive | 1.021      | 3  | .796        |
| Difficult vs. Easy          | 1.790      | 3  | .617        |
| Inefficient vs. efficient   | .462       | 3  | .927        |
| Useless vs. useful          | .648       | 3  | .885        |
| Unfriendly vs. friendly     | 2.056      | 3  | .561        |
| Frustrating vs. satisfying  | 3.536      | 3  | .316        |
| Ineffective vs. powerful    | 6.107      | 3  | .107        |
| Dull vs. stimulating        | 4.907      | 3  | .179        |
| Rigid vs. flexible          | 1.678      | 3  | .642        |

**Notes: \* significant at  $P < 0.05$**

From Table 5.5.6, the result of Kruskal-Wallis test showed that there was no significant difference among students' level of computer knowledge and their opinion on overall quality of VuFind.

### 5.5.7: Kruskal-Wallis Test for difference among Age and Overall satisfaction with both (OPAC) Interfaces.

**Table 5.5.7: Kruskal-Wallis Test for difference among Age and Overall satisfaction with both (OPAC) Interfaces**

| Variable                    | Chi-Square | df | Asymp. Sig. |
|-----------------------------|------------|----|-------------|
| Terrible vs. Wonderful      | 1.955      | 3  | .582        |
| Unimpressive vs. impressive | 5.039      | 3  | .169        |
| Difficult vs. Easy          | 3.436      | 3  | .329        |
| Inefficient vs. efficient   | .877       | 3  | .831        |
| Useless vs. useful          | 1.322      | 3  | .724        |
| Unfriendly vs. friendly     | .422       | 3  | .936        |
| Frustrating vs. satisfying  | .560       | 3  | .906        |
| Ineffective vs. powerful    | 1.672      | 3  | .643        |
| Dull vs. stimulating        | 2.447      | 3  | .485        |
| Rigid vs. flexible          | 2.878      | 3  | .411        |

**Notes: \* significant at  $P < 0.05$**

Table 5.5.7 showed, the result of Kruskal-Wallis test showed that there was no significant difference among the students falling into different age groups in terms of their opinion on overall quality of both (OPAC) interfaces.

### 5.5.8: Kruskal-Wallis Test for difference among Computer Use and Overall satisfaction with both (OPAC) Interface.

**Table 5.5.8: Kruskal-Wallis Test for difference among Computer Use and Overall satisfaction with both (OPAC) Interface**

| Variable                    | Chi-Square | df | Asymp. Sig. |
|-----------------------------|------------|----|-------------|
| Terrible vs. Wonderful      | 8.187      | 5  | .146        |
| Unimpressive vs. impressive | 3.707      | 5  | .592        |
| Difficult vs. Easy          | 7.013      | 5  | .220        |
| Inefficient vs. efficient   | 11.429     | 5  | .044 *      |
| Useless vs. useful          | 2.277      | 5  | .810        |
| Unfriendly vs. friendly     | 6.296      | 5  | .278        |
| Frustrating vs. satisfying  | 8.499      | 5  | .131        |
| Ineffective vs. powerful    | 5.245      | 5  | .387        |
| Dull vs. stimulating        | 7.300      | 5  | .199        |
| Rigid vs. flexible          | 3.867      | 5  | .569        |

**Notes: \* significant at  $P < 0.05$**

The result of Kruskal-Wallis test showed that there was no significant difference among the students possessing different years of using computer and their opinion on overall quality of both (OPAC) interface, except the area of 'Inefficient vs. Efficient'.

### 5.5.9: Kruskal-Wallis Test for difference among Computer knowledge and Overall satisfaction with both (OPAC) Interfaces.

**Table 5.5.9: Kruskal-Wallis Test for difference among Computer knowledge and Overall satisfaction with both (OPAC) Interface**

| Variable                    | Chi-Square | df | Asymp. Sig. |
|-----------------------------|------------|----|-------------|
| Terrible vs. Wonderful      | 9.989      | 3  | .019 *      |
| Unimpressive vs. impressive | 3.751      | 3  | .290        |
| Difficult vs. Easy          | 2.786      | 3  | .426        |
| Inefficient vs. efficient   | 7.571      | 3  | .056        |
| Useless vs. useful          | 3.192      | 3  | .363        |
| Unfriendly vs. friendly     | 4.446      | 3  | .217        |
| Frustrating vs. satisfying  | 3.407      | 3  | .333        |
| Ineffective vs. powerful    | 1.105      | 3  | .776        |
| Dull vs. stimulating        | 3.083      | 3  | .379        |
| Rigid vs. flexible          | 2.764      | 3  | .429        |

**Notes: \* significant at  $P < 0.05$**

From Table 5.5.9, the result of Kruskal-Wallis test showed that there was no significant difference among the students knowledge of using computer and their opinion on overall quality of both (OPAC) interface, except the area of ‘Terrible vs. Wonderful’.

### 5.5.10: Kruskal-Wallis Test for difference among Age and Overall satisfaction with both (VuFind) Interface.

**Table 5.5.10: Kruskal-Wallis Test for difference among Age and Overall satisfaction with both (VuFind) Interface**

| Variable                    | Chi-Square | df | Asymp. Sig. |
|-----------------------------|------------|----|-------------|
| Terrible vs. Wonderful      | .872       | 3  | .832        |
| Unimpressive vs. impressive | 3.551      | 3  | .314        |
| Difficult vs. Easy          | 2.946      | 3  | .400        |
| Inefficient vs. efficient   | 1.572      | 3  | .666        |
| Useless vs. useful          | 2.375      | 3  | .498        |
| Unfriendly vs. friendly     | 1.307      | 3  | .727        |
| Frustrating vs. satisfying  | 7.603      | 3  | .055        |
| Ineffective vs. powerful    | .725       | 3  | .867        |
| Dull vs. stimulating        | .623       | 3  | .891        |
| Rigid vs. flexible          | 2.375      | 3  | .498        |

**Notes: \* significant at  $P < 0.05$**

From Table 5.5.10, the result of Kruskal-Wallis test showed that there was no significant difference among the students falling into different age groups in terms of their opinion on overall quality of both (OPAC) interfaces.

### 5.5.11: Kruskal-Wallis Test for difference among Computer Use and Overall satisfaction with both (VuFind) Interface.

**Table 5.5.11: Kruskal-Wallis Test for difference among Computer Use and Overall satisfaction with both (VuFind) Interface**

| Variable                    | Chi-Square | df | Asymp. Sig. |
|-----------------------------|------------|----|-------------|
| Terrible vs. Wonderful      | 3.309      | 5  | .652        |
| Unimpressive vs. impressive | 7.202      | 5  | .206        |
| Difficult vs. Easy          | 1.099      | 5  | .954        |
| Inefficient vs. efficient   | 2.523      | 5  | .773        |
| Useless vs. useful          | 8.982      | 5  | .110        |
| Unfriendly vs. friendly     | 2.520      | 5  | .774        |
| Frustrating vs. satisfying  | 6.315      | 5  | .277        |
| Ineffective vs. powerful    | 2.080      | 5  | .838        |
| Dull vs. stimulating        | 4.582      | 5  | .469        |
| Rigid vs. flexible          | 6.170      | 5  | .290        |

**Notes: \* significant at  $P < 0.05$**

Table 5.5.11 showed, the result of Kruskal-Wallis test showed that there was no significant difference among the students possessing different years of using computer and their opinion on overall quality of both (VuFind) interface.

### 5.5.12: Kruskal-Wallis Test for difference among Computer knowledge and Overall satisfaction with both (VuFind) Interface.

**Table 5.5.12: Kruskal-Wallis Test for difference among Computer knowledge and Overall satisfaction with both (VuFind) Interface**

| Variable                    | Chi-Square | df | Asymp. Sig. |
|-----------------------------|------------|----|-------------|
| Terrible vs. Wonderful      | 3.988      | 3  | .263        |
| Unimpressive vs. impressive | 1.305      | 3  | .728        |
| Difficult vs. Easy          | .546       | 3  | .909        |
| Inefficient vs. efficient   | 7.067      | 3  | .070        |
| Useless vs. useful          | 2.144      | 3  | .543        |
| Unfriendly vs. friendly     | 7.623      | 3  | .054        |
| Frustrating vs. satisfying  | 2.229      | 3  | .526        |
| Ineffective vs. powerful    | 3.386      | 3  | .336        |
| Dull vs. stimulating        | 7.506      | 3  | .057        |
| Rigid vs. flexible          | .667       | 3  | .881        |

**Notes: \* significant at  $P < 0.05$**

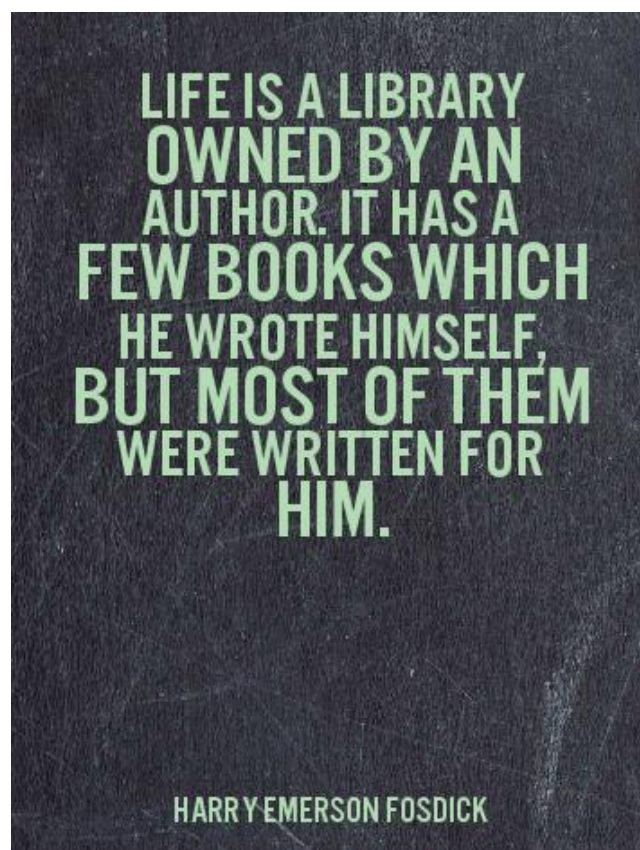
Table 5.5.12, showed, the result of Kruskal-Wallis test showed that there was no significant difference among students' levels of computer knowledge and their opinion on overall quality of both (VuFind) interfaces.

### **5.6 Summary:**

For Data analysis purpose, Frequency count, Mean, SD on several factors was calculated, Mann-Whitney and Kruskal-Wallis tests were also conducted.

# CHAPTER - 6

## FINDINGS RECOMMENDATION CONCLUSION

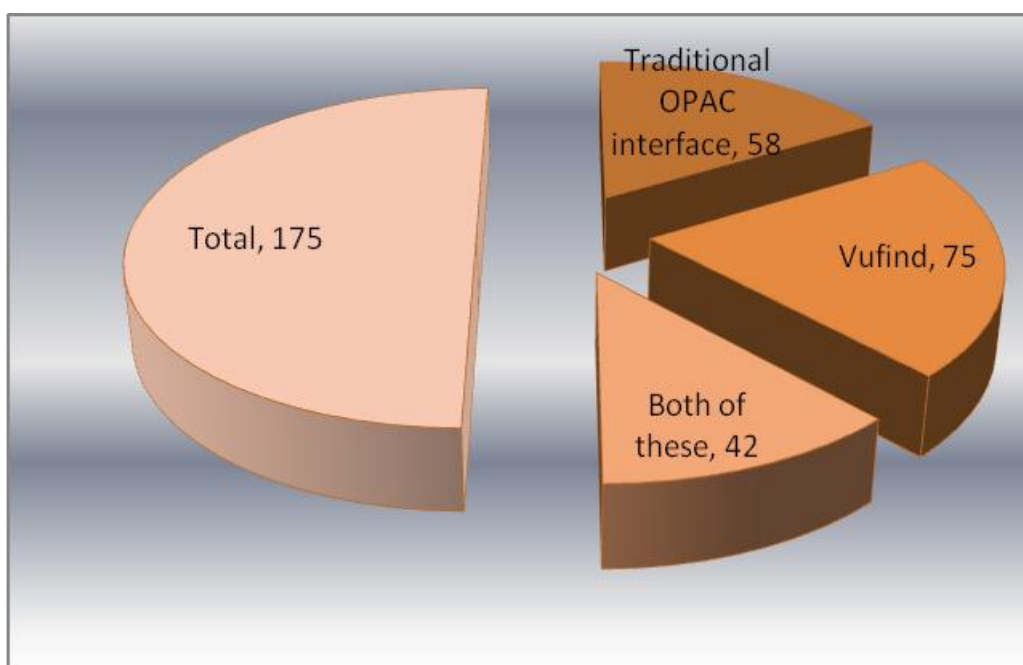


## **6.0 FINDINGS/RECOMMENDATIONS/CONCLUSION:**

This chapter summarizes the results of the study on students' preference for online catalogue search: Discovery tools Vs traditional OPAC interface. A total of 175 students responded to the survey. A questionnaire was used for this research.

### **6.1 FINDINGS**

The results showed that out of 175 respondents, 138 (78.90%) students were aware of their University Library's online public access catalogue and 37 (21.10%) students are not familiar with OPAC. Most of the students generally find what they were searching for. Most respondents (46.90%) were in the age group of 19-21 years. The overall result of this survey shows that students were generally satisfied with traditional OPAC and both interfaces, but they are highly satisfied with VuFind.



**Figure 6.1.1 Students' preference for using OPAC, VuFind, & Both.**

Among 175 respondents, 75(42.90%) students use only VuFind and the rest 58(33.1%) use the OPAC interface. Only (42, 24.00%) student use both interfaces.

### **6.1.1 Mean and Standard Deviation:**

The result of mean and SD calculation showed that majority of students were highly satisfied with discovery tool VuFind as the mean values fall above 5 except one (on 7-point scale). Majority of students were satisfied with traditional OPAC as the mean values fall above 4 (on 7-point scale). Like OPAC, the users who use both interfaces are also satisfied with these interfaces as the mean values fall between 4 and 5 (on 7-point scale).

### **6.1.2 Mann-Whitney test:**

#### **6.1.2.1 Gender and overall satisfaction to OPAC:**

The results of Mann-Whitney test on several factors showed that there was no significant difference between male and female respondents in terms of their opinion on overall quality of the OPAC.

#### **6.1.2.2 Gender and overall satisfaction to VuFind:**

The results of Mann-Whitney test on several factors showed that there was no significant differences between male and female respondents in terms of their opinion on overall quality of the VuFind, except in the area 'Ineffective vs. Powerful'.

#### **6.1.2.3 Gender and overall satisfaction to both (OPAC):**

The results of Mann-Whitney test on several factors showed that there was no significant difference between male and female respondents in terms of their opinion on overall quality of both (OPAC) interface.

#### **6.1.2.4 Gender and overall satisfaction to both (VuFind):**

The results of Mann-Whitney test on several factors showed that there was no significant differences between male and female respondents in terms of their opinion on overall quality of both (VuFind) interface except the area 'Inefficient vs. Efficient'.

### **6.1.3 Kruskal wallis test:**

#### **6.1.3.1 Age Group and overall satisfaction with OPAC:**

The result of Kruskal-Wallis test showed that there was no significant difference among the students falling into different age groups in terms of their opinion on overall quality of OPAC, except in the area ‘terrible vs. wonderful’.

#### **6.1.3.2 Students’ Computer Use and overall satisfaction with OPAC:**

The result of Kruskal-Wallis test showed that there was no significant difference among the students possessing different years of using computer and their opinion on overall quality of OPAC.

#### **6.1.3.3 Students’ Computer Knowledge and overall satisfaction with OPAC:**

The result of Kruskal-Wallis test showed that there was no significant difference among the students knowledge of using computer and their opinion on overall quality of OPAC.

#### **6.1.3.4 Age Group and overall satisfaction with VuFind:**

The result of Kruskal-Wallis test showed that there was no significant difference among the students falling into different age groups in terms of their opinion on overall quality of VuFind, except in the area ‘Inefficient vs. Efficient’.

#### **6.1.3.5 Students’ Computer Use and overall satisfaction with VuFind:**

The result of Kruskal-Wallis test showed that there was no significant difference among the students possessing different years of using computer and their opinion on overall quality of VuFind, except the area of ‘Unimpressive vs. Impressive’.

#### **6.1.3.6 Students’ Computer Knowledge and overall satisfaction with VuFind:**

The result of Kruskal-Wallis test showed that there was no significant difference among the students knowledge of using computer and their opinion on overall quality of VuFind.

#### **6.1.3.7 Age Group and overall satisfaction with both (OPAC) interface:**

The result of Kruskal-Wallis test showed that there was no significant difference among the students falling into different age groups in terms of their opinion on overall quality of both (OPAC) interface.

#### **6.1.3.8 Students' Computer Use and overall satisfaction with both (OPAC) interface:**

The result of Kruskal-Wallis test showed that there was no significant difference among the students possessing different years of using computer and their opinion on overall quality of both (OPAC) interface, except the area of 'Inefficient vs. Efficient'.

#### **6.1.3.9 Students' Computer Knowledge and overall satisfaction with both (OPAC) interface:**

The result of Kruskal-Wallis test showed that there was no significant difference among the students knowledge of using computer and their opinion on overall quality of both (OPAC) interface, except the area of 'Terrible vs. Wonderful'.

#### **6.1.3.10 Age Group and overall satisfaction with both (VuFind) interface:**

The result of Kruskal-Wallis test showed that there was no significant difference among the students falling into different age groups in terms of their opinion on overall quality of both (OPAC) interface.

#### **6.1.3.11 Students' Computer Use and overall satisfaction with both (VuFind) interface:**

The result of Kruskal-Wallis test showed that there was no significant difference among the students possessing different years of using computer and their opinion on overall quality of both (VuFind) interface.

#### **6.1.3.12 Students' Computer Knowledge and overall satisfaction with both (VuFind) interface:**

The result of Kruskal-Wallis test showed that there was no significant difference among the students knowledge of using computer and their opinion on overall quality of both (VuFind) interface.

## **6.2 Recommendations:**

### **1. Orientation and Information literacy programmes:**

The Library should organize orientation programs how to use the online public access catalogue (OPAC), VuFind & other facilities offered by the library for the new students. Although the library organizes Information literacy programs to inform several library facilities at a regular interval, but still a number of students are not aware about the existence of OPAC. Therefore the Orientation & Information literacy programs should be conducted seriously.

### **2. Number of computer:**

The number of computers for students use in Aysha Abed Library is very low as compared to the number of students served by the Library. The Library authority should increase the number of computers for searching and locating library materials.

### **3. Regular update:**

Library's OPAC and discovery tools should be updated regularly.

### **4. Need more Internet speed:**

Improvements are also needed in terms of increasing bandwidth and campus network services.

### **5. VuFind should allow 'add to favorite' without log in id & password.**

This research reported "Student preference for online catalogue search: Discovery tools Vs traditional OPAC interface". It is hoped that the findings of this study will be taken into account by library of BRAC university to understand user preference and develop and improve its OPAC and VuFind if needed. Factors such as the exclusion of technical terms and language to enhance perceived ease of use of the interfaces should be taken into consideration. Clear terminology to provide effective communication of system instructions and responses to users should be given priority. Navigational clarity should also be given importance by the technical designers. Care must be taken in terms of interface characteristics so that the acceptance of the interface can be increased.

### **6.3 CONCLUSION:**

Nothing is perfect and the possibility of improvement always remains. Changes are inevitable, keeping in view the emerging trend to be competitive in life.

On the basis of the results and discussions mentioned above, it can be concluded that among the respondents of the university libraries, 21.1% students were not familiar with OPAC. At the same time, the internet alone cannot be a substitute for all quality library resources. In such a scenario, the library professionals have to contemplate ways to improve the functionalities of the OPAC, otherwise the value and importance of the OPAC will be lost. It is high time for the librarians to convey users' expectations regarding OPACs to library software developers. They should also collaborate with system designers to fulfill the users' needs.

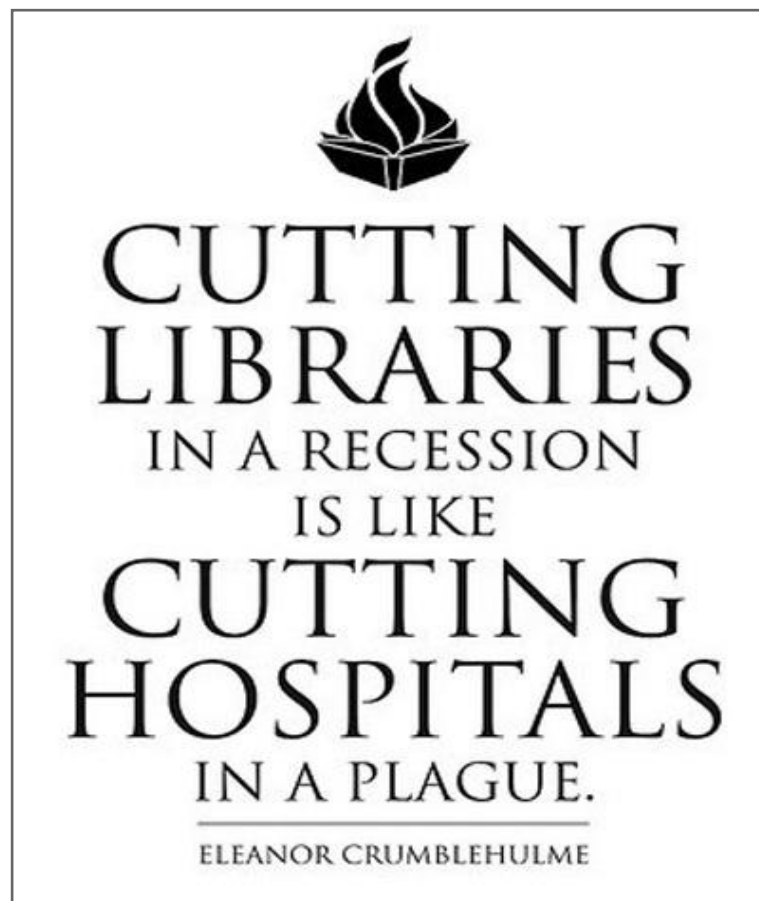
The rapid pace of technological developments in the first decade of the twenty-first century has presented new opportunities to extend the functionality of library systems in the form of OpenURL resolvers, federated search engines, electronic resource management systems, digital library applications, and discovery platforms (like Vufind). Achieving simplicity among the complex array of bibliographic and full text resources is the driving force.

The discovery tool Vufind should provide modern functionalities of the popular search engines of the present time such as a single-search entry format similar to Google's OneBox technology, advanced search options, and integrated user-centric Web 2.0 functionality. Other features include relevance ranking; federated searching; faceted navigation; spell checking ("did you mean . . .?"); RSS feeds; and interoperability and social networking services such as tagging, reviews, ratings, and recommendations.

The common goal of discovery tool is to offer greater value with efficiency, relevancy, ease of use, and fast speed in finding information. The option to search across multiple environments, such as local catalogs, databases, web sites, and A-Z Lists, coupled with social networking services, provides users with a comprehensive, enriched, in-depth, and engaging information discovery experience in a highly networked universe.

The area for further research would be usage studies of classic catalogue OPACs in libraries where discovery tools are offered, specifically, how often and what kind of searches are performed, by whom, and from what web page or interface the classic catalogue was accessed.

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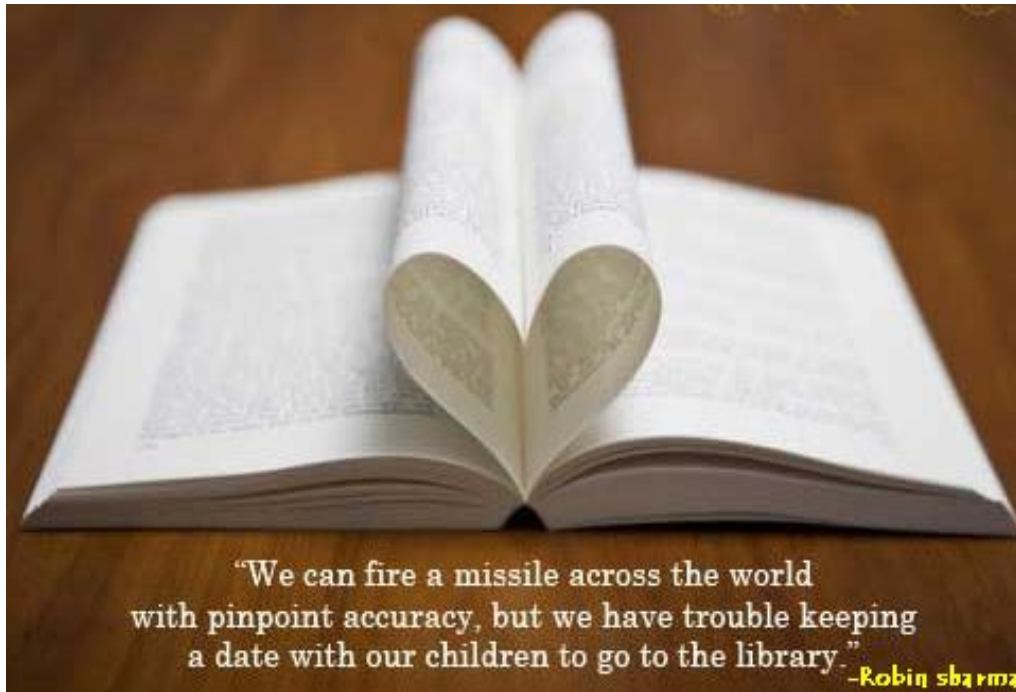
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# APPENDIX



## Questionnaire on “Students’ preference for online catalogue search: discovery tool Vs traditional OPAC interface”

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### Demographic/General Questions:

1. Name
2. Department
3. Educational Status / Level of Study: Undergraduate/Postgraduate
4. Year/Semester:
5. Gender
  - Male
  - Female
6. Age group
  - Below 19 years
  - 19 to 21 years
  - 21 to 23 years
  - Above 23 years
7. How long have you been using a computer?
  - 1-2 years
  - 3-4 years
  - 5-6 years
  - 7-8 years
  - 9-10 year
  - More than 10 years
  - I do not know how to use a computer
8. How would you rate your knowledge of using computers?
  - Excellent
  - Above average
  - Average
  - Below average
  - Extremely poor

### Section A

#### Awareness of Traditional OPAC and Vufind:

1. Have you heard about OPAC at your university library?
  - Yes
  - No
2. Which interface do you generally use in locating library resource?

*Student’s Preference for Online Catalogue Search: Discovery tool Vs Traditional OPAC*

- Traditional OPAC interface
  - Vufind
  - Both of these
3. Which interface do you prefer for catalogue search?
- Traditional OPAC interface
  - Vufind
  - Both
4. How often do you use your library catalogue?
- Almost Everyday
  - several times a week
  - Once a week
  - Once in a fortnight
  - Once a month
  - Rarely
  - Never
5. What type of information do you generally look for in the library catalogue?
- Book
  - Journal
  - E-resources
  - Databases
  - All above
  - Others (please specify)
6. How do you find out information from the catalogue interface? (Multiple answers permitted)
- Library home page
  - Counsel with Librarian
  - Counsel with Friends
  - Counsel from Faculty member
  - All above
  - Other
7. Do you generally find what you were looking for in the catalogue?
- Yes
  - No
  - Sometimes
8. Do you find the search results useful?
- Yes
  - No
  - Sometimes
9. Do you use the search “refine” options?

- Yes
- No
- Sometimes

10. If you used them, which “refine” options do you find helpful?

(please tick all that apply)

- Author
- Title
- Call number
- ISBN/ISSN
- Subject
- Series
- Tag
- All above

11. Can interface features in your library catalogue allow advanced search option?

- Yes
- No

12. Would you like to be able to see a preview of a book in the library catalogue before getting it from the shelf?

- Yes
- No
- Not sure

13. which Catalogue interface would you recommend to your friend to use?

- Traditional OPAC
- Vufind
- Both

### Section B:

### Opinion on traditional OPAC:

1. Do you find any of these features useful?

(Multiple answers permitted)

- Emailing a search result to yourself
- Saving items to “my favorites”
- Book marking search results
- Providing Language suggestion(spell error check )
- All above
- Others (Please specify)

2. Did you experience any problems with the new catalogue interface?

- no problems
- slow speed
- System error
- All above
- Others (Please specify)

3. What do you like about the catalogue interface?

- Easier to use
- Simple, clear, straightforward
- Refine options
- Easier to search and brow

4. If you could change something about the catalogue interface to improve it, what would it be?

- Nothing
- Graphic Interface
- More information in emailed results,
- The ability to select and print a set of results,
- All above
- Other (please specify)

■ Please circle the numbers which most appropriately reflect your impression about Using the system .Try to respond all the items and for items that are not applicable, use: NA.

### Overall reaction

|    |              |   |   |   |   |   |   |   |             |    |
|----|--------------|---|---|---|---|---|---|---|-------------|----|
| 1  | terrible     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | wonderful   | NA |
| 2  | Unimpressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Impressive  | NA |
| 3  | Difficult    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Easy        | NA |
| 4  | Inefficiency | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Efficient   | NA |
| 5  | Useless      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Useful      | NA |
| 6  | Unfriendly   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Friendly    | NA |
| 7  | Frustrating  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Satisfying  | NA |
| 8  | Ineffective  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Powerful    | NA |
| 9  | Dull         | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Stimulating | NA |
| 10 | Rigid        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Flexible    | NA |

## Opinion on vufind:

1. Which features of vufind seems to useful? (Multiple answers permitted)

- Emailing a search result to yourself
- Saving items to “my favorites”
- Book marking search results
- Providing Language suggestion (spell error check )
- Helps to create citation
- RSS feed
- All above
- Others (Please specify)

2. Have you experienced any problems with the new catalogue interface?

- Have no problems
- Slow speed
- System error
- All above
- Others (Please specify)

3. What do you like about the new catalogue interface?

- Easier to use
- More attractive
- Simple, clear, straightforward
- Combined catalogue/e-resource search
- Refine options
- Easier to search and browse
- RSS feed
- All above

4. What difficulties are you experiencing in the use of the new library catalogue interface?

- Visibility
- Usability
- Accessibility
- Navigation
- All above
- None of them

5. What do you dislike about the new catalogue interface?

- Nothing
- Having to log in to favorites

- Interface and search results too cluttered
- Graphic design
- Don't have the ability to select and print a set of results
- All above
- Other(Please specify)

■ Please circle the numbers which most appropriately reflect your impression about Using the system .Try to respond all the items and for items that are not applicable, use: NA.

### Overall reaction

|    |              |   |   |   |   |   |   |   |             |    |
|----|--------------|---|---|---|---|---|---|---|-------------|----|
| 1  | terrible     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | wonderful   | NA |
| 2  | Unimpressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Impressive  | NA |
| 3  | Difficult    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Easy        | NA |
| 4  | Inefficiency | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Efficient   | NA |
| 5  | Useless      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Useful      | NA |
| 6  | Unfriendly   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Friendly    | NA |
| 7  | Frustrating  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Satisfying  | NA |
| 8  | Ineffective  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Powerful    | NA |
| 9  | Dull         | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Stimulating | NA |
| 10 | Rigid        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Flexible    | NA |