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Call for submissions and instructions for authors

The PNLA Quarterly publishes both peer-reviewed and high-quality non-peer reviewed articles. Please indicate whether you would like your article to go through blind peer review when you submit it.

Authors should include a 100-word biography and mailing address with their submissions. Submit feature articles of approximately 1,000-6,000 words on any topic in librarianship or a related field. Issue deadlines are

Peer-reviewed articles:

October 1 (Winter)

January 1 (Spring)

April 1 (Summer)
July 1 (Fall)

**Non-peer-reviewed articles**

October 1 (Fall)

January 1 (Winter)

April 1 (Spring)

July 1 (Summer)

Please email submissions to mbolin2@unl.edu in rtf or doc format.

Would you like to serve as a peer reviewer? Please contact the editor at mbolin2@unl.edu
President's Message
Michael Burris

NBC has for the better part of two decades run public service announcements with the theme “The more you know”. In these spots, stars of NBC shows provide tidbits on topics such as physical fitness, the environment and education. The spots fall into the “things that make you go ‘hmmm’” category and are designed to make the viewer think. Whether a person watching Fear Factor is really looking to expand their horizons is debatable, but the sentiment is a good one. And while I am sure that most library staff, with our over-representation on Jeopardy, most likely think “I knew that” when viewing the spots, I am guessing that all of us has seen one or two nuggets that we can pack into our crowded craniums.

I was contemplating NBC’s PSAs on a couple of fronts this past week. The PNLA Board is preparing for our February meeting in Dumas Bay. Agendas will be shared, reports forwarded and action items updated. This meeting will be our first since the conference in Spokane. At the Spokane meeting, the Board voted to not hold our traditional November meeting due to the precarious state of PNLA finances. Cancelling the meeting was a double-edged sword. We did save some money, but in not meeting since August, you run the risk of stifling any momentum coming out of that Board meeting. The Board meetings are a great opportunity to connect regarding progress on actions items. Nothing focuses the mind quite like a deadline! It is human nature to fall back into the pattern of dealing with the realities of your day-to-day existence. So we saved some money, but at what cost to moving the association closer to its goals? It is a question we will be addressing in February.

The other aspect of the “the more you know” slogan that has been on my mind recently is also a result of planning for the February Board meeting. At that meeting, a major topic on the agenda will be transitioning to the Best of the Northwest theme for future PNLA conferences. We feel that this approach to conference programming will resonate with library staff from all of the states and provinces that comprise PNLA. I think that the strength of the PNLA conference (besides the great locations, awesome social events and terrific people!) has been the diversity of the program. In Spokane we had sessions on outreach programming in Northern Idaho, multi-media marketing at the Timberland Regional Library in Washington and lending e-Readers in West Vancouver, BC. And let’s not forget the perennial favourite, Reading the Region! There is definitely a lot going on across PNLA. And it’s not just the conference. My connections through PNLA have led me to learn about the power of legislative days that take place in states such as Washington, or that the Montana Library has sponsored “library” license plates, or the Idaho Library Association advocacy efforts include “Legislators READ!” posters. Without the contacts I have made in PNLA, I would know nothing of Alaska’s O.W.L. program, a public private partnership enhancing public computer centers at more than 100 public libraries across the state that also provides an innovative free public videoconferencing network available to all Alaska public library users. I never would have learned about Alberta’s “Check out the Writer” Provincial Writer-in-Residence Project. And I never could have shared the amazing work that takes place every day in the libraries of my home province, British Columbia.

We in the library community have a lot to be proud of and a lot of terrific accomplishments that need to be shared. Belonging to a regional association such as PNLA will expand your horizons and keep you informed. After all, the more you know ...
From the Editor
Mary Bolin

This issue represents a variety of interesting topics and informative research from authors in the PNLA region, in other parts of the US, and from our growing community of fine international authors. We can feel proud of the reach and scope of PNLA as an organization. Please enjoy the opportunity to be informed on topics ranging from metadata for image collections, to the Federal Depository Library Program, to the use of information by medical practitioners, and much more.
Cataloging Images Using CONTENTdm

Silke Higgins

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Introduction

The project description provides insight into the author's first steps at creating and publishing a small collection of digital images with the use of the CONTENTdm digital collection management system and the Dublin Core Metadata Element Set in an effort to enhance the online finding aids of the university library's Special Collections & Archives department with visual materials.

Background

Institution: Dr. Martin Luther King, Jr. Library

In February 1997, San José Mayor Susan Hammer and San José State University President Robert L. Caret announced their plan to build a combined public and university library that would serve both as the SJSU Library and as San José's main library (Dr. Martin Luther King, Jr. Library, 2011). The new library would be the first joint-use library in the United States, named after Dr. Martin Luther King, Jr.

The MLK, as it is fondly referred to by many, opened on August 15, 2003; today it houses over 1.7 million volumes, seats more than 3500 people, and receives over 2 million visitors each year (ibid).

Repository: San José State University Special Collections & Archives

The San José State University Special Collections & Archives was formed in 1980 when the university’s archives and manuscripts were united with its rare book collection. In 2003, with the opening of the Martin Luther King Jr. Library, SJSU Special Collections & Archives found its new home on the fifth floor. The state of the art facility allows access for researchers and members of the public alike, and houses manuscripts, university records, flat folio materials, photographs, theses, rare books, and one-of-a-kind items ranging from 1850 to present day. The Special Collections & Archives continues to grow as new materials are added; staff and student assistants evaluate, archive, and make accessible information about each of the collections via the electronic database Online Archive of California (OAC), accessible via the World Wide Web at www.oac.cdlib.org (email communication with Danelle Moon, Director/Associate Librarian of SJSU Special Collections and Archives, November, 10, 2009).

Project Host 1: King Library Digital Collections

The images of the Dr. Martin Luther King, Jr. Library Digital Collections represent

Rare and unique materials held by San José State University Special Collections and the San José Public Library’s California Room. The collections document the history of the Santa
Clara Valley from its agricultural beginnings to the high-tech boom and formation of the Silicon Valley. The range of subjects covered include local politics, social and cultural traditions, education, local business and industry, and historical events (King Library Digital Collections, 2011).

Project Host 2: Online Archives of California (OAC)

"The Online Archive of California (OAC) provides free public access to detailed descriptions of primary resource collections maintained by more than 150 contributing institutions including libraries, special collections, archives, historical societies, and museums throughout California and collections maintained by the 10 University of California (UC) campuses" (Online Archives of California, 2009).

Project Context and Beginnings

For each of the finding aids created at the San José State University Special Collections & Archives, an online version is encoded in EAD (Encoded Archival Description) and published on the Online Archives of California (OAC). During my processing of a small collection of books, manuscripts, ledgers, scrolls and relià of Far East Asian origin, it occurred to me that some of the items included in the collection would not fare well for long were they to be moved and handled repeatedly as a result of increased research interest. Seeking alternative solutions I proposed to my director to include digital images showing some of the more important items alongside the OAC finding aid I was about to publish (for more information on the Far East Asia Collection, please visit http://bit.ly/lliDSu). My proposal was met with favor and I set to work exploring what would be my first-ever foray into creating and publishing a collection of digital objects outside the controlled learning environment of library school. I intended this "adventure" to be nothing more than a test-run of possibilities; little did I know at the time that I would be placed in charge of creating a new collection to be included in the official King Library Digital Collections.

As I went along, finding my way from trial and error to success, I quickly figured out that exporting the relevant metadata to be sent to the Online Archives of California was a very easy process; as a result I suggested that going forward, Special Collections & Archives could make the inclusion of sample images a regular part of the collection-processing curriculum. My director not only agreed with my plan but went several steps further: how about if I were to implement a collection that would showcase these sample images as part of the King Library Digital Collections project? And what if I were to create a new digital collection that would serve as an "umbrella collection," which would grow over time, with new images and short descriptions to be added for every collection processed?

With these "simple" suggestions, my test run had changed from being a "toy project" to becoming a very real, extensive, and comprehensive undertaking: instead of simply figuring out how to send metadata for a few images to the Online Archives of California, I was placed in charge of creating a brand new digital sub-collection of the King Library Digital Collections, effectively contributing to the King Library's major efforts to create and increase access to its rare and special collections items.

Digital Management System

The Dr. Martin Luther King, Jr. Library utilizes the CONTENTdm digital collections management system to describe, catalog, and publish collections of digitized and born-digital items. Since having been acquired in 2006 by the OCLC, CONTENTdm serves as a complete content management system for digital collections, allowing institutions to choose from a variety of
options, ranging from all-inclusive out-of-the-box configuration to full Application Programming Interface (API) customization (OCLC CONTENTdm, n.d.). While CONTENTdm in many ways mirrors the functionality of a repository, its model in actuality "is most similar to a database management system that keeps track of the locations of digital files and the relationships between these files" (Cervone, 2010, 21). At the King Library, CONTENTdm is hosted on one of the library's own servers where the technology department is in charge of running, maintaining, updating, and troubleshooting of the management system. The collection described for this paper was created using the latest version of CONTENTdm 5.

**Metadata Schema**

The CONTENTdm digital collections management system utilizes the *Dublin Core Metadata Element Set*, or *Dublin Core* for short (Reese & Banerjee, 2008). The result of an OCLC invitational workshop held in Dublin, Ohio, in 1995, *Dublin Core* is a set of generic metadata elements so simple as to cover "the basic requirements for simple descriptions" of objects (Chopey, 2005, 8) but useful enough to allow for the discovery of resources "across a broad range of information domains and languages" (Chopey, 2005, 7). The initial set of *Dublin Core* elements and corresponding meta tags, the "DC-15," is divided into three broad groups, serving as indicators for the type of information to be stored within (Intner, Lazinger, & Weihs, 2006): the first group contains elements which are mainly related to the content of the resource (Title, Subject, Description, Type, Source, Relation, Coverage); the second group relates to the resource as intellectual property (Creator, Publisher, Contributor, Rights); and the third group is comprised of those elements "related mainly to the Instantiation of the resource" (Date, Format, Identifier, Language) (ibid). Soon after the establishment of the DC-15, many proponents of *Dublin Core* were looking for "finer semantic distinctions and more extensibility for particular communities" (NISO, 2004, 3), sparking a debate that ultimately resulted in the distinction between the *Simple* (unqualified) and *Qualified Dublin Core*. To achieve the latter, the decision was made to provide a set of qualifiers - soon thereafter named *Element Refinements* (Intner, Lazinger, & Weihs, 2006) and made available as the *Dublin Core Qualifiers*, a companion specification to the *Dublin Core* element set (Caplan, 2003).

**Image Creation**

The 12 images I ultimately selected to serve as surrogates for items of the *Far East Asia Collection* (see *Screenshot 1* in Appendix A) were created on multiple occasions: in 2008 a colleague of mine had briefly surveyed the collection and appropriately noted its value. As a result, he had taken multiple high-resolution preservation quality (TIF) images of collection items he deemed especially important with his own digital camera. However, he soon afterwards graduated from his position as a student assistant, and the digital images, as well as his collection processing plan, were stored in his SJSU *Special Collections & Archives* work folder and all but forgotten until I came across them shortly after I was entrusted with processing the collection in 2010. I supplemented his images with those of my own, focusing on details of the collection's *realia* and languages represented, as well as on book and pamphlet covers showing artwork. As previously mentioned, at this point in time I had assumed this project to be a small "test run" and had resulted to taking images with the camera of my *Apple, Inc. iPhone 4*. Surprisingly, the photographs turned out so well I was able to utilize them for the CONTENTdm collection; as a result I was able to avoid having to once again remove the collection's fragile items from the cold-storage vault and exposing them to yet another photo session.

**Product Creation**
The individual product creation sections contained under this heading provide an overview of the creation of the King Library Digital Collections Special Collections Showcase Collection by highlighting the main steps, providing insight into some of the King Library's specific digital collection establishment policies, and pointing out some of the difficulties encountered.

*Project Creation: CONTENTdm Desktop Project Client*

Each *King Library Digital Collections* digital collection is created on the CONTENTdm desktop project client, with the exception of naming the collection and setting the server parameters. Before starting a collection/project, specific steps need to be carefully considered, as whatever has been decided upon cannot in most cases be reversed without having to start over.

1. Naming the collection: a new collection cannot be established in the desktop project client; this step needs to be taken on the CONTENTdm administrative side (CONTENTdm Administrator), which is usually password protected and accessible server-side only (see *Screenshot 2* in Appendix A). During this initial step it is of vital importance to select the correct server, and to set the collection parameters to “shared project” to ensure that different users on different computers will be able to access the collection contents. Failure to do so results in the collection being accessible only on the desktop it was created on, making it an impossible task in a large institution for those in charge of reviewing the different steps involved (such as approval of the collection contents by the head cataloger) to view the collection unless they leave their desk and come find the computer the collection originated on.

2. Selection of the proper Dublin Core Metadata Template: this step must be configured in the CONTENTdm Administrator as well; choices include the basic DC-15 (*Simple Dublin Core*) and a pre-configured extended template (*Qualified Dublin Core*), as well as the option to configure a template entirely "a la carte." In the case of the King Library, a specific template was created when the *King Library Digital Collections* project was first established; it is currently used for all digital collections and described in more detail in this project write-up under the heading of *Dublin Core Metadata Fields*.

3. Ensuring that the file formats of the images and file-naming conventions are according to specifications: failure to do so upfront results in having to start over as images cannot simply be replaced - if an image is erased, the entirety of the record is deleted as well. I learned this lesson the hard way, after I had imported and cataloged high-quality TIF images instead of the required JPGs. Adhering to specific naming conventions for file-names ensures a modicum of uniformity and eases the association of digital objects with their respective collections.

*Dublin Core Metadata Fields*

The Dr. Martin Luther King, Jr. Library utilizes one *Dublin Core* metadata template for all of its CONTENTdm collections. The template guidelines are specified in the *Dr. Martin Luther King, Jr. Library SJSU Special Collections & Archives Department & San José Public Library California Room Best Practice Guidelines for Digital Collections*. The template is comprised of the 15 *Dublin Core* "core elements," the DC-15, along with a number of qualifiers for a total of 29 elements, as illustrated in *Screenshot 3* in Appendix A. The template is usually not altered to specifically suit an individual collection; rather, the fields not applicable are left blank.

*Image Format*

Each image in any digital King Library collection is imported into CONTENTdm as a high-quality JPG, regardless of original format. Images not originating in JPG format need to be
converted with the use of Adobe Photoshop or IrfanView graphic viewer. At this point in time the King Library does not have a standardized digital preservation program in place; however, it is recommended that a set of preservation-quality TIF images is stored alongside the JPG images in the designated directory/folder structure. Reasons for JPG as the format of choice are threefold: JPG provides good-quality images suitable for everyday viewing on most devices; keeps image loading times for Internet browsers in acceptable ranges; and saves space on the server designated by the library to hold CONTENTdm content.

Cataloging

Due the nature of the Dublin Core Metadata Element Set, cataloging of the images appears to be comparatively easy. At the King Library, titles are kept short, descriptions focus on the nature of the content, and two to four subject headings are chosen from the controlled vocabulary included in the CONTENTdm content management software only (see Screenshot 4 in Appendix A), with the exception of historically significant collections where prominent local persons, places, establishments, or buildings are involved. Many of the fields need to be cataloged only once (i.e. cataloger, source, collection) and can then conveniently be “filled down” for the entirety of the collection, this being one of the major advantages of working with an electronic content management system.

However, when it comes to cataloging, nothing is ever as easy as it seems; problems arose from fields I least expected to cause trouble. Following the guidelines of the Dr. Martin Luther King, Jr. Library SJSU Special Collections & Archives Department & San José Public Library California Room Best Practice Guidelines for Digital Collections I discovered that for the Language field, the entry was specified to be "English," "Chinese," etc., that is, the full name of the language with its first letter capitalized. Having gone through an in-depth inspection of the Dublin Core Metadata Initiative's Dublin Core Metadata Element Set, Version 1.1: Reference Description guidelines, by now considered by the majority of Dublin Core users to the authoritative standard, I knew that languages should be cataloged with a code consisting of either two or three letters in lower-case: "en" or "eng" for English, for example (DCMI, 2011). Furthermore, I realized that there was a discrepancy between the library's guidelines instructions in regards to the Dimensions field and those given by the Dublin Core Metadata Initiative: height times width, or width times height, which one was it to be? Knowing that these decisions would be far outside my level of authority I decided to seek the assistance of the San José State University King library head cataloger, who not only patiently listened but also decided to update the library's best practice standards according to my suggestions.

Project Finalization: CONTENTdm Server-Side Client

After the cataloging of a digital collection is completed the images and metadata are uploaded to the CONTENTdm server side (CONTENTdm Administration) for approval. Approval is usually granted/denied after the cataloger in charge has reviewed the uploaded items and made changes if and where necessary. The collection is then indexed via an automated process so it can be searched and viewed via CONTENTdm and/or WorldCat (OCLC, 2009). Once these steps have been completed, the final switch is thrown: the collection settings are changed from “unpublished” to “published,” effectively making the collection visible to all.

Further Steps

Extraction of METS

Once the collection is “live,” it is quite simple to extract a collection’s metadata for a variety of purposes. In my case, the goal was to provide the Online Archives of California (OAC) with a
full set of METS records, allowing that institution to extract the information needed to publish the collection of images alongside my Far East Asia Collection finding aid. The extraction process itself is simple: the CONTENTdm Administrator includes an automated process that produces, with the toggling of a few options, a full set of XML records, conveniently wrapped in METS, ready to be stored and sent in seconds (see Screenshot 5 in Appendix 5). Naturally, it is helpful if the receiving institution works with (or is at least prepared to work with) the type of metadata set CONTENTdm generates. As such is the case with the Online Archives of California, all I have to do is send the created XML file via email.

As from that point on I would not be involved in any way in the creation and publication of the image files for the Online Archives of California, I at least wanted to find out a bit about the theory behind the OAC’s on-site process. In an email conversation conducted over the course of a couple of weeks in early 2011 with the California Digital Library’s primary data consultant, I learned that the METS records extracted include all necessary information about the images, and also a file path that allows the OAC to gain access to the King Library’s designated CONTENTdm server. With this information, the OAC is able to pull two copies for each image in my collection, bind them with the metadata provided, and publish them alongside the designated finding aid.

Preparation of a new "King Library Digital Collections" Collection

Before a new collection can be published on the King Library Digital Collections website, an “About” (this collection) page must be created. The purpose of this web page is to introduce the collection by providing information about the collection’s background and describing both its digital and physical manifestations. Visitors are encouraged to subscribe to an RSS feed for the collection and/or to visit the corresponding finding aid located on the website of the Online Archives of California (OAC) via the included link (see Screenshot 6 in Appendix A).

The strict guidelines for the creation of the About page are laid out in the King Library Digital Collections Back-end Guide: For each About page, a template must be created and stored in the appropriate templates folder; file naming conventions are strict, ensuring uniformity and findability of the collections’ templates. All templates must be created as .txt files to avoid unwanted html syntax showing up in the back-end, as it is the case with files created/edited in MS Word. Templates are encoded in simple HTML, using the following tags only:

<h3>your heading text</h3> for the collection title (heading)

<h3>your heading text</h3> for sub-headings, 10px top spacing

<p>your paragraph</p> for a double line break

<br /> for a single line break

<a href="your full url" title="your text">your text</a> to create a link and name link

<strong>your text</strong> to create bold text

<em>your text</em> to create italic text

While I initially found it amusing to see these tight restrictions placed on the HTML encoding of the About page, upon second thought I ended up marveling at how very little knowledge and experience is necessary to create a simple and effective web page.
In addition to creating an HTML encoded About template, an image must be selected, which represents the collection. While this is a fairly easy process when the image is chosen from within the collection the About page describes (one has the option of either leaving the randomly chosen image in its place or replacing it with another by means of a simple code that consists of the collection name and the chosen image's unique CONTENTdm number), I discovered that trouble arises when an image from a different collection is chosen. In my case, my director and I decided to use an image from a collection other than the Special Collections Showcase Collection. My suspicions that a bit of coding may be needed proved correct but luckily, our library's web design team had the issue resolved within a single hour.

**Conclusion**

“Nothing is ever easy.” The old adage holds true for the creation of digital collections just as much as it does for everything else. When I started out on my “grand adventure,” armed with knowledge of CONTENTdm and Dublin Core gained from a single library school assignment, I was convinced there could not be all that much "rocket science" involved in importing a few pictures, cataloging them, and publishing them. The first lesson I learned was that school and real life are vastly different: whereas in my library school course, the instructor had taken care of all things related to the configuration and back-end solutions of CONTENTdm, at my job I was expected to know (or acquire knowledge) about all of these steps upfront. The second lesson I learned is that going about something one does not really know anything about is a bad choice: had I asked before creating my little collection as an un-shared project with TIF images and exhaustive subject headings cataloging, I would have not had to start over. Lesson three taught me that not knowing is not a crime, and that asking is the way to gain knowledge, connect with persons from different departments, make friends, and even effect policy change. Lesson four learned revolves around patience: working in a large institution with multiple persons from different departments does not always lend itself to a timely and smooth work flow - it has now been more than four months since I first started working on the Showcase Collection project; and with the latest hick-up of being unable to display the chosen image on the About page, the collection will remain unpublished until a solution has been found, further delaying my sending a set of extracted METS metadata file to the Online Archives of California. And with that, lesson five comes into play: perseverance is key and giving up is not an option.

**References**


**Appendix A**

*Screenshot 1: Some of the Images Selected Displayed on the CONTENTdm Project Client*

*Screenshot 2: Initial CONTENTdm Collection Configuration*
**Collection configuration**

View and edit the collection profile and settings, including PDF conversion, display image settings, archival file management and image rights. To view and configure the metadata fields for this collection (and to enable full text searching), see fields.

<table>
<thead>
<tr>
<th>Profile &amp; permissions</th>
<th>edit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collection name</td>
<td>Special Collections Showcase (SJBU)</td>
</tr>
<tr>
<td>Collection alias</td>
<td>/showcase</td>
</tr>
<tr>
<td>Directory name</td>
<td>D:\content\showcase</td>
</tr>
<tr>
<td>Collection status</td>
<td>Not published</td>
</tr>
</tbody>
</table>

**Permissions**

User name
IP address
Require permissions For metadata and items

**Collection information**

Collection information is displayed in the Project Client to help different users of the system distinguish between the collections.
Collection information undefined.

**Optional collection settings summary**

Click edit to review and change the complete settings for each.

<table>
<thead>
<tr>
<th>PDF conversion</th>
<th>Do not convert multiple-page PDF files to compound objects</th>
<th>edit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display image settings</td>
<td>Generate display images from full-resolution images</td>
<td>edit</td>
</tr>
<tr>
<td>Archival file manager</td>
<td>Do not save files to an archive volume location</td>
<td>edit</td>
</tr>
<tr>
<td>Image rights</td>
<td>No image rights options available for Web imports (create in the Project Client)</td>
<td>edit</td>
</tr>
</tbody>
</table>

**Screenshot 3: King Library Dublin Core Metadata Fields Template**
<table>
<thead>
<tr>
<th>Field name</th>
<th>DC map</th>
<th>Data type</th>
<th>Large</th>
<th>Search</th>
<th>Hide</th>
<th>Required</th>
<th>Vocab</th>
<th>add field</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 File Name</td>
<td>None</td>
<td>Text</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>move to</td>
</tr>
<tr>
<td>2 Title</td>
<td>Title</td>
<td>Text</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>move to</td>
</tr>
<tr>
<td>3 Creator</td>
<td>Creator</td>
<td>Text</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>move to</td>
</tr>
<tr>
<td>4 Date</td>
<td>Date</td>
<td>Text</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>move to</td>
</tr>
<tr>
<td>5 Internal Date</td>
<td>Date</td>
<td>Date</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>move to</td>
</tr>
<tr>
<td>6 Description</td>
<td>Description</td>
<td>Text</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>move to</td>
</tr>
<tr>
<td>7 Note</td>
<td>Note</td>
<td>Description-Table Of Contents</td>
<td>Text</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>move to</td>
</tr>
<tr>
<td>8 Subject-TGM</td>
<td>Subject-TGM</td>
<td>Text</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>move to</td>
</tr>
<tr>
<td>9 Subject-LCSH</td>
<td>Subject-LCSH</td>
<td>Text</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>move to</td>
</tr>
<tr>
<td>10 Subject-Local</td>
<td>Subject-Local</td>
<td>Text</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>move to</td>
</tr>
<tr>
<td>11 Geographic Coverage</td>
<td>Geographic Coverage</td>
<td>Text</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>move to</td>
</tr>
<tr>
<td>12 Style/Period/Group/Movement</td>
<td>Style/Period/Group/Movement</td>
<td>Text</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>move to</td>
</tr>
<tr>
<td>13 Publisher</td>
<td>Publisher</td>
<td>Text</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<td>Text</td>
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<td>Text</td>
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<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<td>Description</td>
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<td>Yes</td>
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<td>No</td>
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<td>No</td>
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</table>

**Screenshot 4: CONTENTdm - Subject Headings, Controlled Vocabulary Display**
Screenshot 5: CONTENTdm Metadata Export Options
Screenshot 6: The Special Collections Showcase Collection's About Page

Choose the method used to export metadata.

- **Tab-delimited**: Exports data as a tab-delimited text file.
- **XML**: Exports data as XML.
  - **Standard Dublin Core XML**
  - **CONTENTdm Standard XML**
    - **Include only the full text field from page-level metadata**
    - **Include all page-level metadata**
  - **Custom XML**
    - **Include all page-level metadata**
- **OCLC SiteSearch**: Exports data that can then be loaded to an OCLC SiteSearch database.
  - **Dublin Core**: Produces the SGML and DTD files that can be used to load a defined Dublin Core database.
  - **Custom**: Define tags used in the exported SGML file, which will then be used with the DTD file to load a custom SiteSearch database.
About Special Collections Showcase (SJSU)

Background
The San Jose State University Special Collections & Archives is comprised of rich and unique holdings consisting of primary and secondary sources documenting local, regional, and California history with a focus on higher education, history, politics, literature, and art.

The Digital Collection
The Showcase Collection consists of visual representations of notable items chosen from the multitude of collections held by the San Jose State University Special Collections & Archives. Special Collections is regularly adding new materials in an effort to increase information about and access to its primary resources. If you are interested in keeping up to date with the latest additions, you can sign up for the collection RSS Feed. For additional information on this collection and the use of its images, contact the SJSU Special Collections Department.

The Physical Collections
For each of the physical collections of the San Jose State University Special Collections & Archives visually represented in the Showcase Collection, a brief description is provided along with a link to the finding aid published on the Online Archives of California.

The Far East Asia Collection
The Far East Asia Collection consists of a collection of books, scrolls, and other artifacts believed to have been donated by Miss Ethel Swiger. Miss Swiger graduated from San Jose State College in 1934 and received her credential in librarianship in 1942. She went on to help establish the program of library education at Yonsei University in Seoul, Korea, from 1956 to 1960. Also included are several books in Chinese from the personal collection of writer, poet, and San Jose State University English professor Esther Shepard. For a description of the contents of the physical collection, as well as more information about the scope of the physical collection, visit the online Finding Aid.

For additional information on the scope and content of the individual physical collections, visit the Online Archives of California.
In-school Adolescent Girls’ Reproductive Health Information Needs and Resources in Public Secondary Schools in Lagos State, Nigeria

Stella Ngozi Ifeoma Anasi

Kenneth Ivo Ngozi Nwalo (PhD)

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Introduction

Information is critical to the healthy development of a woman right from infancy and childhood, to adolescence and the reproductive years, to the post reproductive period. In fact, to a large extent the quality of life of women depends on the quality of information at their disposal and the purpose to which it is used. Every girl, therefore, should have the right to information which will enable her to assess the alternatives and make an informed decision.

Literature on adolescent reproductive health information needs is very sparse. This is because adolescents’ access to reproductive health information remains a contentious issue for parents, government and many religious groups. Yet, young people have a special need for information on sexual and reproductive health in order to avoid becoming victims of sexually transmitted diseases, HIV/AIDS and teenage pregnancies.

The most basic reproductive health information needs of adolescents are accurate and complete information about their body functions, sex, safer sex, reproduction, and sexual negotiation and refusal skills (Bearinger, Sieving, Ferguson and Sharma, 2007).

Schools can be a hub for the provision of accurate and ge-appropriate reproductive health information. In Nigeria, a study by Araoye (1998) showed that adolescents who received sexuality education in school had more accurate information than the other students. School based reproductive health information provision is especially important for girls for whom school constitutes the major outside source of information.

Libraries are not only a means of obtaining access to required information but also of providing the user independent access to all kinds of ideas and information (Alegbeleye, 1981). People see libraries as familiar, accessible and as a reliable source of information (Lancaster, 2003). According to Ajayi and Omotayo (2010) libraries are also open to the community and generally safe. They can therefore be uniquely comfortable places for students to spend time to find out more about HIV/AIDS without fear of stigmatization. Consequently, libraries have a moral vindication to provide access to information for children and young adults with special attention to AIDS issues (Batambuze, 2003). In the same vein, Ajayi and Omotayo (2010) agreed that librarians can play a significant role in the provision of health information if they listen carefully to the needs of students, develop cultural competence and work with them. A study conducted by Deering and Harris (1996) indicated that 60% of the respondents agreed that libraries were among their preferred sources of health information. On the contrary, another study by Odusanya and Bankole (2006) revealed that libraries and
The state of the libraries in Nigeria may be responsible for this anomaly. The result of the study by Ajayi and Omotayo (2010) showed that information resources on HIV/AIDS in libraries were outdated and therefore not useful to the students. In Calabar, most school libraries are not adequately stocked and staffed to provide the needed information to the teenagers (Ottong and Nwalo, 2001). Indeed, Nwalo (2004) stated that school libraries in Nigeria are neglected and they are virtually non-existent especially in public schools. Studies carried out in some parts of Nigeria by Opeke (1994), Achebe(2001), Oguntase (2004), Adetoro (2005), Akinlolu (2008), and Enem (2010) identified poor funding, inadequate accommodation, inadequate and outdated collection, lack of library integration in the educational programmes and lack of a vibrant school library association as major obstacles to school libraries development. Thus only few public schools in Nigeria have any semblance of what might be referred to as libraries. Consequently, they are incapable of providing information resources to meet the users’ needs.

In the final analysis, the state of school libraries in Nigeria leaves much to be desired. Where there are no libraries in schools, provision of information services to students in meeting their needs would be hamstrung. Yet, school libraries and librarians in Nigeria, like in developed countries, can play a significant role in the provision of reproductive health information to students. It is against this backdrop that this study examined the reproductive health information needs of in-school adolescent girls’ and reproductive health resources available in public secondary schools in Lagos State, Nigeria.

**Objectives of the Study**

The objectives of the study are:

- to determine the reproductive health information needs of in-school adolescent girls in Lagos State,
- to investigate the state of the school libraries and level of reproductive health materials in the schools in Lagos State and
- to ascertain the in-school adolescent girls access to libraries and librarians in Lagos State.

**Research Method**

The study adopted the descriptive survey research design. A questionnaire complemented with focus group discussion and observation was used for data collection. The questionnaire was administered on a total population of 1800 students randomly selected from 18 schools in six local education districts in Lagos State, Nigeria. Out of the 1,800 copies of the questionnaire, 1367 were fit for statistical analysis, representing a response rate of 76%.

The researchers also visited the schools and the school libraries to observe the resources in the schools which promote access to reproductive health information. Considering the teeming population of students in public secondary schools in Lagos State, schools that had less than 10 reproductive health materials were considered to be very poor; those that had between 11-20 reproductive health materials were regarded as being poor; those that had between 21-50
reproductive health materials were deemed to be fairly good while the ones that had over 50 reproductive health materials were considered to be good.

Findings and Discussion

The results of the reproductive health information needs of the respondents are presented in Table 1. The means score computed indicates that the in-school adolescent girls’ most important reproductive health information need is how to maintain healthy friendship with men without sex (= 3.22). This was closely followed by information on how to avoid HIV/AIDS and other sexually transmitted infections (=3.04), how to control sexual desire (=3.02), where to go for HIV test (=2.92), how to identify signs of HIV/AIDS (=2.89), how to avoid premarital sex (=2.86), and how to identify signs of sexually transmitted infections (=2.83). Others are information on how to refuse teenage marriage (=2.72), health effects of female circumcision (=2.55), and different methods of pregnancy prevention (=2.50). The reproductive health information that in-school adolescent girls least desired were information on how to terminate pregnancy safely (=1.90) and where to buy condoms (=1.66).

Respondents seem to be aware of the fact that unwanted pregnancy, HIV can disrupt their school career (Grant and Hallman, 2008; Juarez, LeGrand, Lloyd and Singh, 2008). The in-school adolescent girls greatly desired information on the prevention and management of HIV and sexually transmitted diseases. It seems that with the growth of the HIV/AIDS epidemic, the hunger for HIV/AIDS information has increased (Opeke, 2004). Similarly, the respondents’ desire for information on how to avoid HIV/AIDS and other sexually transmitted infections and how to avoid premarital sex is in line with the findings of other studies on information needs of different user groups which revealed that the respondents expressed that they need information on how to protect themselves from contacting HIV/AIDS (Mabawonku, 1998).

The participant at the Focus Group discussion indicated that they need reproductive health information to guide their actions and decisions. A Focus Group participant at CMS Girls Grammar School 2 stated that: “We need reproductive health information so that we know the right things to do at the right time for now I know that what I should do is to focus on my studies. No boy friend, no sexual intercourse and all that”.

The in-school adolescent girls’ least desired reproductive health information is information on where to buy condom. The fact that condom is conspicuously displayed and sold everywhere in the chemist shops may have contributed to their response. This is consistent with the results of the study which revealed that young people generally felt that the services offered by patent medicine dealers were sufficient to meet their contraceptive needs as these dealers are located on street corners (Otoide, Oronsaye and Okonofua, 2001).

The findings also revealed that majority of in-school adolescent girls are in dire need of information on how to refuse teenage marriage and health effects of teenage marriage. This finding is not surprising as early marriage might likely disrupt their educational career as experience has shown that despite the promises by men to their prospective wives that they will be allowed to pursue an education after marriage, the young bride would inevitably need to drop out of school to nurse her babies and run her home (Uwais, 2010).

From the analysis many of the respondents indicated that they need information on the health effects of female genital mutilation. Access to such information will empower the respondents to insist on their rights and also advocate for its eradication. Their protest might prompt the community leaders to have a rethink and publicly decry the practice.
Data collected revealed that majority of the respondents need information on different methods of pregnancy prevention and how to use them. This finding is supported by the study which reported that almost 50 per cent of unmarried sexually active adolescent in Sub Saharan Africa have an unmet need for contraception (Sedgh, Rubina, Akinrinola and Susheela, 2007). Indeed, high levels of unwanted pregnancy and abortion are evidence of the large unmet need for family planning among adolescents (Juarez, LeGrand, Lloyd and Singh, 2008).

The in-school adolescent girls’ least desired reproductive health information is information on how to terminate pregnancy safely. Perhaps, they take safe way of terminating pregnancy as common knowledge. Previous studies indicated that adolescent girls resort to non-physicians such as patent medicine dealers who are located on street corners for their abortion needs and therefore they felt that they do not need such information (Olukoya, 2002; Olukoya, 2004). Their response may also be a reflection of their ignorance of the consequence of unsafe abortion.

Table 1: The Reproductive Health Information Needs of the Respondents

<table>
<thead>
<tr>
<th>Information needs</th>
<th>Very greatly needed</th>
<th>Greatly needed</th>
<th>Occasionally Needed</th>
<th>Not at all Needed</th>
<th>No response</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV/STDs prevention/management</td>
<td>Freq %</td>
<td>Freq %</td>
<td>Freq %</td>
<td>Freq %</td>
<td>Freq %</td>
<td>Mean</td>
</tr>
<tr>
<td>How to maintain healthy friendship with men without sex.</td>
<td>759 58.2</td>
<td>268 19.6</td>
<td>140 10.2</td>
<td>137 10.0</td>
<td>27 2.0</td>
<td>3.22</td>
</tr>
<tr>
<td>How to avoid HIV/AIDS and other sexually transmitted infections.</td>
<td>704 51.5</td>
<td>297 21.7</td>
<td>136 9.9</td>
<td>178 13.0</td>
<td>3.8 3.0</td>
<td>3.04</td>
</tr>
<tr>
<td>How to control sexual desire.</td>
<td>673 49.2</td>
<td>324 23.7</td>
<td>146 10.7</td>
<td>179 13.1</td>
<td>3.3 3.0</td>
<td>3.02</td>
</tr>
<tr>
<td>Where to go for HIV test</td>
<td>630 46.1</td>
<td>290 21.2</td>
<td>195 14.3</td>
<td>218 15.9</td>
<td>2.5 2.9</td>
<td>2.92</td>
</tr>
<tr>
<td>How to identify signs of HIV/AIDS.</td>
<td>629 46.0</td>
<td>303 22.2</td>
<td>156 11.4</td>
<td>211 15.4</td>
<td>5.0 2.8</td>
<td>2.89</td>
</tr>
<tr>
<td>How to avoid premarital sex</td>
<td>658 48.1</td>
<td>252 18.4</td>
<td>135 9.9</td>
<td>256 18.7</td>
<td>4.8 2.8</td>
<td>2.86</td>
</tr>
<tr>
<td>How to identify signs of sexually transmitted infections</td>
<td>573 41.9</td>
<td>329 24.1</td>
<td>193 14.1</td>
<td>208 15.2</td>
<td>4.7 2.8</td>
<td>2.83</td>
</tr>
<tr>
<td>Health consequences of STDs/AIDS.</td>
<td>554 40.5</td>
<td>294 21.5</td>
<td>152 11.1</td>
<td>279 20.4</td>
<td>6.4 2.6</td>
<td>2.69</td>
</tr>
<tr>
<td>Negative effects of casual sex</td>
<td>402 29.4</td>
<td>273 20.0</td>
<td>213 15.6</td>
<td>366 26.8</td>
<td>8.3 2.4</td>
<td>2.35</td>
</tr>
<tr>
<td>Correct use of condom</td>
<td>341 24.9</td>
<td>148 10.8</td>
<td>171 12.5</td>
<td>671 49.1</td>
<td>2.6 2.0</td>
<td>2.06</td>
</tr>
<tr>
<td>Where to buy condoms</td>
<td>170 12.4</td>
<td>133 9.7</td>
<td>196 14.3</td>
<td>794 58.1</td>
<td>5.4 1.6</td>
<td>1.66</td>
</tr>
<tr>
<td>Teenage marriage</td>
<td>568 41.6</td>
<td>274 20.0</td>
<td>186 13.6</td>
<td>254 18.6</td>
<td>6.2 2.7</td>
<td>2.72</td>
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<tr>
<td>Health effects of teenage marriage</td>
<td>463 33.9</td>
<td>273 20.0</td>
<td>218 15.9</td>
<td>348 25.5</td>
<td>4.8 2.5</td>
<td>2.53</td>
</tr>
<tr>
<td>Genital mutilation</td>
<td>502 36.7</td>
<td>262 19.2</td>
<td>190 13.9</td>
<td>310 22.7</td>
<td>7.5 2.6</td>
<td>2.55</td>
</tr>
<tr>
<td>Health effects of female circumcision.</td>
<td>509 37.2</td>
<td>211 15.4</td>
<td>161 11.8</td>
<td>433 31.7</td>
<td>3.9 2.5</td>
<td>2.50</td>
</tr>
<tr>
<td>Family planning</td>
<td>366 26.8</td>
<td>255 18.7</td>
<td>195 14.3</td>
<td>442 32.3</td>
<td>8.0 2.2</td>
<td>2.24</td>
</tr>
</tbody>
</table>
Table 2 reveals that 7 of the 18 schools surveyed had no reproductive health materials available at all. Only 2 of the schools had a place dedicated to the sole purpose of being a library. Many were mere empty reading space than a library. The two school libraries were fairly spacious, well furnished but have inadequate and outdated learning resources. The library at Ansar-Ud-deen Girls High School was furnished through Education Trust Fund in 2003. However, at Festac Girls Secondary School, there was an attempt at developing an e-library. The library is equipped with one computer, one television, a video player and diskettes. Eleven of the schools visited had less than 10 reproductive health materials and they were regarded as being very poor. They had only a few copies of biology, and integrated science textbooks with relevant information on reproduction. A few posters and stickers that convey reproductive health information were pasted around some of the schools. All the participants at the Focus Group Discussion maintained that they do not have functional libraries and therefore rarely have access to reproductive health information through the libraries. The poor state of the libraries in Lagos public secondary schools implies that Lagos State Government is not committed to the development of school libraries as entrenched in the National Policy on Education, 1981. None of the libraries visited had a qualified school librarian.

The finding of the study on the state of the school libraries and level of reproductive health materials available in the schools revealed that most of the schools have no functional libraries. Where libraries exist at all, they are in a deplorable state and the level of reproductive health materials is very poor. The findings of Okiy (2004) which revealed that most schools in Nigeria lack libraries and the few that are available are poorly funded, lack adequate collections and accommodation supports this result. The finding is consistent with the observation of Hart (2000) that the materials in the libraries in Swaziland were outdated and not useful and the libraries as agents of social change and information providers were not participating actively in the dissemination of reproductive health information to the communities. The result is also similar to what was found by Ayankogbe, Omotola, Inem, Ahmed and Manafa (2003) that only 4.5% of students got HIV information from their schools. They reported that this is rampant all over Africa and a perennial problem in Nigerian schools in general and Lagos schools in particular. In Uganda also a report indicated that school libraries are lagging behind in the provision of HIV/AIDS information (Batambuze, 2003). Details of the findings are presented in Table 2.
Table 2: The State of the School Libraries and Level of Reproductive Health Materials Available in the Schools

<table>
<thead>
<tr>
<th>Name of Schools</th>
<th>Location</th>
<th>State of the library</th>
<th>Level of reproductive health materials.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls Senior High School</td>
<td>Agege</td>
<td>A reading room with few dusty old books on the shelves</td>
<td>Very poor</td>
</tr>
<tr>
<td>Dairy farm sec schl</td>
<td>Agege</td>
<td>A fairly spacious library with no furniture, very few dusty old books</td>
<td>Very poor</td>
</tr>
<tr>
<td>Sango Sec. School.</td>
<td>Agege</td>
<td>No library due to reconstruction</td>
<td>None</td>
</tr>
<tr>
<td>CMS Girls Grammar School 2</td>
<td>Bariga</td>
<td>Very few books, the library serves as both reading room and staff room</td>
<td>Very poor</td>
</tr>
<tr>
<td>Angus Mem.High Sch l</td>
<td>Shomolu</td>
<td>No library</td>
<td>Very poor</td>
</tr>
<tr>
<td>Gbagada Senior Grammar Sch l 2</td>
<td>Gbagada</td>
<td>No library</td>
<td>None</td>
</tr>
<tr>
<td>Girls’ Senior Grammar Sch.</td>
<td>Obalende</td>
<td>A reading room with a few dusty old books on the shelves</td>
<td>Very poor</td>
</tr>
<tr>
<td>Kuramo College</td>
<td>Victoria Island</td>
<td>A fairly spacious library with no furniture, very few books</td>
<td>Very poor</td>
</tr>
<tr>
<td>Falomo High School</td>
<td>Falomo</td>
<td>No library</td>
<td>None</td>
</tr>
<tr>
<td>Wesley Girls’Sec. Schl.</td>
<td>Sabo</td>
<td>No library</td>
<td>None</td>
</tr>
<tr>
<td>Eletu- Odibo High Schl.</td>
<td>Abule Oja</td>
<td>No library due to reconstruction</td>
<td>None</td>
</tr>
<tr>
<td>Fazil Omar High Schl.</td>
<td>Onike</td>
<td>No library due to reconstruction</td>
<td>None</td>
</tr>
<tr>
<td>Festac Girls Secondary School</td>
<td>Festac Town</td>
<td>A fairly spacious reading room, with one computer, one television, one video player, discs</td>
<td>Very poor</td>
</tr>
<tr>
<td>Agboju Sec School</td>
<td>Agboju</td>
<td>A fairy stocked library, well arranged with good furniture</td>
<td>Very poor</td>
</tr>
<tr>
<td>Amuwo-Odofin High Schl.</td>
<td>Mile 2</td>
<td>No library</td>
<td>None</td>
</tr>
<tr>
<td>Ansar-ud-deen Girls High Sch.</td>
<td>Mushin</td>
<td>A fairly spacious library with furniture, many dusty and outdated books</td>
<td>Very poor</td>
</tr>
<tr>
<td>Ilupeju Grammar Sch.</td>
<td>Oshodi</td>
<td>A reading room with a few books</td>
<td>Very poor</td>
</tr>
<tr>
<td>Estate Grammar Schl.</td>
<td>Oshodi</td>
<td>A reading room / staff room with a few dusty old books</td>
<td>Very poor</td>
</tr>
</tbody>
</table>

Investigation into respondents’ access to libraries and librarians revealed that a good number of them 1123(82.2%) have no access to school libraries. A remarkable number of them 761(55.7%) do not have access to the public libraries. Most of them 1160((84.9%) do not have access to librarians. The study has shown that majority of the respondents have no access to libraries and librarians. The librarians are trained to provide the right information to the right person at the right place and at the right time in the right format. They are, therefore, professionally prepared to disseminate reproductive health information to adolescents in the context of unprotected sexual relations and the consequences of early pregnancy, unwanted pregnancy, HIV/AIDS, sexually transmitted diseases and other health
hazards. This is in line with the assertion by Odusanya and Bankole (2006) that librarians as professionals in the collection, organization and dissemination of information and as agents of social change have crucial roles to play in the fight against HIV/AIDS.

Librarians and libraries can do what teachers seldom can that is tailoring reproductive health information to the immediate needs and interests of the adolescent girls. The advantage of having libraries as providers of reproductive health information such as HIV/AIDS information is that no stigma is associated with visiting the library, as there is with a clinic and that the libraries have better setting for the task of disseminating such information (Hart, 2000).

Table 3: Respondents’ access to libraries and librarians

<table>
<thead>
<tr>
<th>Statement</th>
<th>No of respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you have access to school library?</td>
<td>244</td>
<td>17.8</td>
</tr>
<tr>
<td>Yes</td>
<td>1123</td>
<td>82.2</td>
</tr>
<tr>
<td>No</td>
<td>1367</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>1367</td>
<td></td>
</tr>
<tr>
<td>Do you have access to public library?</td>
<td>606</td>
<td>44.3</td>
</tr>
<tr>
<td>Yes</td>
<td>761</td>
<td>55.7</td>
</tr>
<tr>
<td>No</td>
<td>1367</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>1367</td>
<td></td>
</tr>
<tr>
<td>Do you have access to a librarian?</td>
<td>207</td>
<td>15.1</td>
</tr>
<tr>
<td>Yes</td>
<td>1160</td>
<td>84.9</td>
</tr>
<tr>
<td>No</td>
<td>1367</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>1367</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion and Recommendations**

In-school adolescent girls need reproductive health information in order to avoid becoming victims of sexually transmitted diseases, HIV/AIDS, teenage marriages and teenage pregnancies. Unfortunately, the reproductive health information resources in the school libraries are grossly inadequate. There is an urgent need for a deliberate and planned reproductive health information provision among adolescents in Lagos State in particular and Nigeria in general. Therefore, parents, educators, librarians, healthcare providers, policy makers and religious leaders must make concerted effort to ensure that adolescents have access to information on the biological, socio-cultural, psychological and spiritual dimension of sexuality.

Literature suggests that the school is the most effective place for health information, given the extra domestic burden girls bear especially in Nigeria. Teachers and librarians in schools should endeavour to provide age-appropriate reproductive health information to the students. This will help them to develop more rational attitudes and responsible sexual behavior.
To meet the reproductive health information needs of the female students, the Lagos State government and non-governmental organizations in the state should be committed to the development of school libraries as entrenched in the National Policy on Education, 1981. The government should also equip the school libraries with reproductive health information resources that address the special reproductive health information needs of the adolescents.

References


Government Information Use at the University of Idaho: The Results of a National Depository Library Survey

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Introduction

The world of government information has changed dramatically following the widespread adoption of the Internet as a means of sharing information. As more users seek and find the information they need online, some have questioned the importance of the Federal Depository Library Program (FDLP) in helping the public obtain access to government information. Certainly the advent of “born digital” government information has reduced much of the need to visit depository libraries in person; 97% of materials currently distributed through the FDLP are also available online (Government Printing Office, 2009). However, the sheer vastness of government information, even in an electronic environment, presents its own set of challenges for people seeking information. In addition, the increasing quantity of all electronic information means that government information is often overlooked by researchers. Understanding these challenges is vital for depository libraries wishing to fulfill their mission of making government information permanently accessible to their communities and beyond. In order to do this, Shuler, Jaeger, & Bertot (2010), who have written thoughtfully on the changing nature of government information in an electronic world, cite the need for studies to determine how patrons actually use government information and what formats they prefer.

In order to gain information about if and how members of the statewide University of Idaho community use government information, the government documents department at the library participated in a national survey effort spearheaded by the University of Montana. The goal of this survey was to understand the nature of government information use by patrons of participating depository libraries. Not only did the survey provide local information about patron usage of government information, but the data gathered has also been shared among all participating institutions so that comparisons can be made. The results of this survey can therefore be used in two ways: to make marketing and programming decisions that reflect local user needs and experiences as well as to contribute to the larger conversation about the future of the FDLP at a national level. All participating libraries have had the option of using the data in any way they see fit, so it is likely additional articles stemming from the survey will appear in the near future.

Literature Review

The need for members and leaders of the Federal Depository Library Program to respond to the changing nature of government information has not gone unnoticed by those involved with the program. The Association of Research Libraries (ARL) (2009), while supporting “the underlying principles of the program” (p. 6), has stated its desire to see a “reconfigured program that reflects the needs and interests of users of government information and participating libraries” (p.1). Several months after ARL issued their hope for the future, Ithaka S+R, a strategic and research consulting service hired at the behest of ARL and the Chief Officers of State Library Agencies, stated that cost and a lack of incentives to remain in the FDLP were barriers to continued participation by depository libraries (Schonfeld & Housewright, 2009). Their report highlighted what many in the depository community already
know: that the changing information landscape has been forcing those involved with government information to rethink the collections they house and the services they offer.

The Government Printing Office (GPO) itself is not unaware of these concerns. It issued a strategic plan for 2009-2014 that discusses the current state of the program and recommends ways that the program can continue to fulfill its mission of providing “no-fee ready and permanent public access to Federal Government information, now and for future generations” (GPOa, 2009, p. 6). It suggests one of the mechanisms the FDLP should use to help carry out the mission is the continued development of a trained cadre of government information specialists who understand what information exists and how it can be promoted to information seekers. A second method of ensuring the FDLP remains a useful program revolves around the promotion of depository libraries and their resources both by GPO and the libraries themselves. Highlighting GPO’s awareness that service and promotion must be combined with response to technological changes, Williams (2010) states “the library community must encourage GPO in its current efforts to develop systems and delivery mechanisms that have a bias for digital preservation and access” (p. 32).

The realization that changes will need to be made to the FDLP has resulted in some interesting suggestions and proposed projects, among which digitization and improved customer service have featured prominently. Proposing several possible scenarios for the future of the FDLP, Hernon and Saunders (2009) invited response from ARL directors at libraries housing depositories. A majority of respondents envisioned their depository either providing web-feeds of digital government information provided by others or else actively working with GPO to form partnerships based on content-creation or service. Jaeger, Bertot, & Shuler (2010), as well as the Depository Library Council (Jacobs, 2009), have called for libraries to transition from treating government information as a collection to be built and instead consider it as a service to be promoted. More specifically, in a second article, Shuler, Jaeger, & Bertot (2010) recommended the FDLP program “harmonize its activities and structures within the e-government realities that will largely shape its future” (p. 12). Unsurprisingly, discussion continues on issues such as these.

In spite of continuing uncertainties, actual examples of partnerships and digitization projects are already well underway throughout the depository world. Among the most well-known is the TRAIL project, involving more than 20 libraries, which are working to digitize pre-1975 federal technical reports (Center for Research Libraries, 2011). Numerous other digitization projects can be found using the FDLP Digitization Projects Registry (2011). In addition, while not focused solely on federal government information, The Library of Congress’s National Digital Information Infrastructure and Preservation Program also highlights the efforts and understanding of national bodies for preserving and making accessible electronic information. The results of this survey provide additional evidence that a focus on services and the promotion of digital government information are the correct courses of actions for depository (and perhaps non-depository) libraries to take.

**University of Idaho Government Documents Depository**

The University of Idaho Library has been a depository library since 1907. As a regional, the library receives tangible copies of all publications issued through the Federal Depository Library Program. In recent years, the government documents department has opted to receive many publications in microfiche rather than in paper both to save space and to reflect the decreasing use of the physical collection by library patrons. The department is home to one full-time staff member, one half-time staff member, and a graduate student who works ten hours per week. The head of the department is a full-time librarian who has additional responsibilities in reference, instruction, outreach, and collection development.
Until 2010 when a retirement resulted in the loss of one full-time staff member, the department housed a service desk dedicated to providing reference assistance solely related to government information. Decreasing reference transactions and the reduction in staffing prompted the library to shift government information reference services to the main reference desk so that currently all nine librarians who provide reference services at the UI Library are expected to help patrons with their government information needs. Hernon and Saunders (2009) reported that other libraries are also likely to consider this option for service in the coming years. Still, documents staff at the UI Library continues to assist both patrons and librarians with complex government information questions as they arise. Because the government documents at the UI are in closed stacks, the department also serves as a point of retrieval for patrons who have identified a document they need.

A small amount of government document related instruction occurs each year at the University of Idaho. A refresher workshop for librarians and staff is typically presented at the beginning of every school year. Law students at the UI receive specific training in government information from the head of the UI Law Library, which is also a depository, in addition to participating in a special tour of the main library’s government documents stacks. During December 2010 a special workshop on electronic government information was presented as a part of the library’s Savvy Skills research series. Other instruction related to government information takes place on a case-by-case basis in the context of the library’s regular instruction offerings.

Methodology

In August of 2010, the Government Documents Librarian at the University of Montana distributed an email to the Govdoc-L listserv inviting academic depository libraries to simultaneously administer a survey designed to identify the nature of government information use at participating institutions. The University of Idaho Library’s new government documents librarian, who began her work with documents the same month, decided to participate in the survey as a means of better understanding the role of the documents department in providing information to the campus community. Administrative and Institutional Review Board approval for the project were readily given. Although a large number of other depositories originally indicated an interest in participating, the announcement by GPO of a national survey of their own at the same time as the Montana survey unfortunately reduced the number of libraries who felt they could participate. The UI Library’s decision to continue participation in the Montana survey stemmed from the more rigorous research design of the Montana project over the GPO survey. In the end, eight other depository libraries completed the Montana survey and provided data to share with the group. The others were at the University of Montana, Grand Valley State University (Michigan), Northwestern University (Illinois), Northeastern State University (Oklahoma), New Mexico State University, Rice University (Texas), and the University of Akron (Ohio).

Although random sampling and survey administration were done locally at participating institutions, each library used similar methods in order to ensure consistency for comparative purposes. All libraries used Powell and Connaway’s (2004) sample sizes guide to determine the number of students, faculty, and staff who would receive an invitation to participate. At the University of Idaho, the Registrar’s Office provided a random sample of undergraduate and graduate student email addresses while the Office of Institutional Research and Assessment provided email addresses for the random sample of faculty and staff. No effort was made to limit the survey to students, faculty, and staff located in Moscow; as such participants were drawn from throughout the state. The request for participation was distributed via email on February 15, 2011 to 370 undergraduates, 335 graduate students, 271 faculty, and 338 staff members. A follow-up email was sent on February 28. Participants
were provided with a link to the online survey, which was set up using the surveying website Constant Contact.

The survey itself consisted of twenty questions designed to gauge frequency of government information use, reasons for using or not using government information, tools used to identify government information, format preferences, and use of or desire for library services related to government information. In addition, demographic questions asked participants for their age, sex, major or department, and employment designation or year in school. The survey instrument was a scaled-down version of a similar survey done at the University of Montana in 2006 (Burroughs, 2008). Participating libraries had the opportunity to refine the instrument prior to its distribution through communications via a project wiki. It should be emphasized that this survey was undertaken and administered in the context of an academic environment. As such, the focus was largely on the uses of government information for research rather than personal use. Undeniably a large number of citizens use e-Government resources from various government agencies outside the context of academic research (i.e. obtaining tax information from the IRS or viewing the latest TSA carry-on allowances prior to a flight). While related and certainly worthy of study, the use of government information for personal reasons was not the focus of this particular survey.

Results

The University of Idaho’s survey had a participation rate of 6.21% among undergraduate students, 9.55% among graduate students, 15.5% among faculty, and 20.71% among staff members. In addition, 16.1% of respondents did not provide information about their status at the institution. The response rates were consistent with those obtained from other participating institutions. Several individuals selected for participation emailed the author asking if they should fill the survey out given that they rarely used government information. They were told that they were welcome to participate and note this fact. Ultimately, a handful of the survey comments specifically stated the participant did not make use of government information, indicating that both users and non-users are represented to some degree in the results.

Unsurprisingly, the majority of respondents, both nationwide and at the University of Idaho, conduct research on a fairly regular basis. At Idaho, 71.5% of respondents claim to conduct research at least once a month. Fewer researchers acknowledge using government information when doing their research; still, 47.3% of respondents use government information at least once a month in their own work. This contrasts somewhat with the data from the other reporting institutions, at which more respondents reported conducting research at least once a month (78.7%) but fewer reported using government information (38.2%).[1] This may reflect the land-grant status of the University of Idaho. The use of government information in disciplines such as agriculture and technology may be more prevalent than at other institutions participating in the survey where liberal arts are more prominent.

Survey questions that ask about why participants are not using government information suggest a need for increased promotion and services related to government information. The two biggest reasons for not using government information were similar in nature: 36.7% of UI respondents said the government publishes nothing of value in their field while 29.1% claimed to be unaware of the existence of such materials. These reasons, while not given quite as often, were still the top two reasons listed in the national survey, and they suggest many potential users of government information do not know about resources that might be pertinent to their area of study. Results nationally were 22.1% and 16.3% respectively. The results suggest a need for increased visibility of government information. [FIGURE 1]
Questions about how respondents find the government information that they do use also indicate a need for increased awareness of specialized tools related to government information. Google was the tool used most often to seek out government information by far more participants than any other resource. At Idaho 48.3% of respondents reported using the search engine at least once a week to find government information. This dwarfs usage of FDsys/GPO Access, which only 12.6% of respondents reported using even once every four months. The government’s portal to web resources, Firstgov.gov, likewise lost out to Google with only 6.7% using it as often as they use Google. Perhaps reflecting the fact that fewer researchers reported using government information overall in the national survey, only 35% claimed to have used Google to find government information each week while 3.2% made use of Firstgov.gov weekly. Just 8.7% made use of FDsys/GPO Access in a quarterly period. In spite of the smaller numbers in the national survey, the fact remains that information seekers across the United States turn to Google before government specific finding tools.

Regardless of the type of search tool used by respondents to find government information, the web is undeniably the most common medium for learning about it in the first place. More survey respondents, both at Idaho and nationally, reported hearing about government information via a website than from any other source. Interestingly, respondents at Idaho were also likely to hear about government information from newspaper stories and scholarly
journal articles, much more so than respondents nationwide. A sizable minority also reported that peers were another likely source of finding out about government information. On the other hand, RSS Feeds and blogs do not appear to be a heavily used method for learning about new government information.

Several questions in the survey sought information about the types of government information and services related to government information that are currently used by the UI community. The UI Library’s Government Documents Department webpage had been used by 61.9% of respondents, by far the most used service of any offered. Course-integrated instruction had reached 20.2% of respondents, and 19% had made use of one-on-one research consultations for help specifically related to government information. Because local services vary, this question was not asked by all participating libraries, so no comparison can be made with the types of services used at other depositories nationwide. Still, it seems likely that webpages will continue to be a popular service offered by all depositories, and it would behoove most to continue using them as a means of making patrons aware of other government information resources, such as FDsys or Firstgov.gov.

Figure 2

A question about what type of services respondents would like to see made available continued to provide evidence that electronic means will be the best way to make government
information available to patrons going forward. At the UI, 54.5% of respondents indicated they wanted to see digitization-on-demand of government publications as an offered service. The high response rate at UI is somewhat surprising given that, like users nationwide, most indicated they are more likely to use current government documents (2005 to the present) than they are older (1980-2005) or historic documents (prior to 1980). Many current government publications are already born digital, so perhaps the desire for digitization indicates library patrons would use more historic documents if they were made available electronically. Regardless of the reasons, the desire for increased access to documents online supports depository libraries’ desire to expand digitization activities and partnerships, and perhaps even allow regional depositories to replace tangible publications with digitized version. (GPO, 2009, p. 7-8).

**Figure 3**

![Bar Chart: What Services Would You Be Interested in Using?](image)

- Course-integrated Instruction: 22.70%
- Digitization-on-Demand: 54.50%
- Subject Guides: 48.40%
- Training on Specific Subjects: 31.80%
- Notification of New Documents: 37.80%
- One-on-One Consultations: 28.00%
- Virtual Reference: 25.00%
- Web-based Tutorials: 52.20%
The types of alerting services for which respondents indicated a preference are somewhat surprising. Documents staff at the UI Library had recently discussed promoting RSS feeds as a way of keeping patrons up to date on subject specific government information; however, the survey indicates that only 10.8% of respondents prefer this format for alerts. It is possible that respondents are unaware of the nature and convenience of RSS feeds; still, UI documents staff cannot ignore the fact that email alerts and website updates are the preferred way for respondents to learn about new government information. Making decisions about the type of information to include in email alerts or on the department website will be challenging in spite a survey question designed to gauge opinion in this area. Large numbers of respondents want local, state, and national information, as well as information related just to their subject area. In other words, they want it all. Likewise, the responses related to frequency of alerts are varied enough to make pleasing everyone challenging.
One of the recurring challenges that government information specialists have is letting patrons know about government information when the patrons do not believe in the first place that there is anything of value to them. This survey suggests that many respondents are unaware of government information that might be relevant to their field of expertise. Responses to a question designed to ascertain what type of instruction would be most helpful provide evidence that this challenge exists. The majority of respondents indicated they had no interest in instruction related to government information whatsoever or they did not respond to the question at all. While it seems likely instruction of some type would increase knowledge of government information, determining how best to do this will remain a challenge for the UI Library and other academic depositories nationwide.
Figure 6

First Choice of Instruction Format (National)
Discussion

The results of the survey provide useful data for assessing and improving services related to government information. Certainly, it is encouraging to see that nearly half of respondents at Idaho use government information on a regular basis in their research. This indicates that government information is of value to many patrons and that it is worthwhile for libraries to be aware of this type of information and how to access it. What is less encouraging is that so few respondents use government-created finding tools while doing their searches. Certainly Google is a useful and powerful resource for finding many types of information. The ability to limit to .gov sites does frequently make Google an appropriate resource for finding various types of government documents and webpages. Still, many useful pieces of government information can be found only in specific government databases, which Google does not search (Orlando and Hyde, 2010). Although the survey did not ask about GPO’s new free federated search engine, MetaLib, which debuted in the fall of 2010, given the small number of respondents who use FDsys/GPO Access or Firstgov.gov, it seems likely that few know about and/or use MetaLib either. The lack of use of tools such as these suggests that libraries
should make a concentrated effort of developing an awareness of and promoting use of these resources to their patrons as is deemed appropriate.

The survey also provides useful information to help the UI Library determine what avenues will best promote government information and increase awareness of it. Certainly the large percentage of respondents who reported using the government documents webpage indicates that documents staff must take advantage of this venue to promote resources such as FDsys and MetaLib. In addition, the fact that one in five respondents had heard about government information through some form of library instruction suggests that this is another valuable method for informing patrons about government information. As such, updates and reminders about government-specific search tools will be communicated to instruction librarians at the UI. Likewise, because a similar number reported learning about government information through one-on-one research sessions, reference librarians will be continuously informed about new government information trends and resources. Laster (2010) suggests that utilizing subject specialists as sources of expertise for government information may be a way for libraries to avoid a decline of expertise related to government information as fewer physical materials make their way through documents departments.

In addition to maintaining an up-to-date webpage and using librarians as advocates of government information, three other activities rated high enough on the survey for documents staff to consider investing time and energy into making them a reality. Although the library will probably not be able to provide digitization-on-demand of documents requested by patrons at this point, selected digitization projects will likely be considered. Also, the library is currently exploring the possibility of partnering with other institutions to contribute to the digitization of federal documents as is encouraged by the FDLP (Digitization Projects Registry, 2011). The other two services patrons would like to see will be undertaken during the coming year. Video tutorials about various aspects of library services and resources are already created and updated on a regular basis at the UI Library. Making government information the focus of some videos is a logical activity to begin in light of the survey results. In addition, the library has recently decided to subscribe to LibGuides. Already the government documents librarian is looking at how other libraries have used the guides to inform patrons about government information. The LibGuides are another possible way to meet the varied desires of survey respondents for information in a diverse array of types and formats.

**Conclusion**

The Government Printing Office and FDLP libraries have gone to enormous efforts over the past decade to ensure more government information is easily searchable and accessible to the nation’s citizens. The new digital management system, FDsys, which replaces GPO Access, and the new federated search engine, MetaLib, which searches multiple U.S. Federal government databases simultaneously, both testify to improvements in electronic access to our nation’s government information. The prioritization of digitization projects and the push for individual depositories to collaborate and publicize their projects indicates awareness of the changing nature of government information and the desire of users for information in an easily accessible format. (FDLP, 2011, p. 77-98). This survey provides evidence that efforts such as these, as well as similar undertakings at a local level, are in line with what patrons want and expect as they seek out government information.

Access alone does not ensure that valuable and useful government information reaches those who would benefit most from it. It falls to information professionals to ensure patrons are aware of the resources available from the U.S. Government. Results of this survey, while especially pertinent to the University of Idaho Library and its users, are relevant to libraries that serve patrons who might need government information—potentially all libraries. The similarities in results between the UI survey and those at the other participating depositories indicates that a wide swath of users nationwide have similar levels of knowledge about government information and similar preferences for learning about and using it. This
information implies that libraries would do well to consider government information as a possible resource while helping patrons with a wide variety of questions as patrons themselves may not always know about the informative and diverse resources available from the government.

Works Cited


[1] The University of Idaho data are not included in the national average figures.
Information Seeking and Use by Medical Practitioners at University of Ilorin Teaching Hospital

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Introduction

Information seeking and use is a major topic in LIS research. Research on information seeking and use by professionals has been applied to a variety of disciplines such as law, education, engineering, and accountancy. Medical science depends on having good information. Gbadamosi (2004) states that the performance of medical practitioners is contingent upon the sources and skills of medical doctors in searching for relevant information.

The role of information expert entails not only information gathering but also guiding users to it. Akinade and Adedipe (1994) indicate that information seeking can be observed, recorded, and measured. Sharing of important information by people involved in health care services provides avenue to develop and share important information on preventive and curative measures.

Medical practitioners have researched other areas at the University of Ilorin Teaching hospital but not information seeking behaviour and use. Ogunronbi, (2001) indicates that environmental factors and interests influence information seeking habits, practices, needs, and preferences.

Background on the University of Ilorin Teaching Hospital (UITH)

The University of Ilorin Teaching Hospital (UITH) was established by the 1979 Act of Parliament to provide health care services and development of human resources. The objectives of the Teaching Hospital as highlighted by Fakeye (2000) include:

- Health care services using available skill, specialized knowledge, advanced technology, and referrals other hospitals.
- Human resources development and training of medical personnel.
- Research into clinical, epidemiological, and operational research in accordance with internationally accepted guidelines.

A teaching hospital responsibility for training, development, and research into clinical sciences. Mathews and Picken (1979) reports that health professionals increase their contribution to health care and status through interaction with other people’s ideas. The University of Ilorin Teaching Hospital cannot stand in isolation if it wants to compete favourably with others.

Medical practitioners depend on a variety of information sources. Medical practitioners require information sources that will improve their performance. Such information sources include patient records, drug information, and other current awareness sources.

Despite the fact that information requirements are an important aspect of health services delivery in the University of Ilorin Teaching Hospital, little or nothing has been done to research the problem of information needs, sources, availability, and use of available information within the hospital complex. This study aims to identify the information needs and
information-seeking behaviour and the use by practitioners with the aim of improving the existing situation.

**Objectives of the Study**

The main objective of this study is to identify information sources relevant in the discharge of medical duties, including varying formats and characteristics of each to medical practice and practitioners. The study will include individual preferences of medical practitioners to the different medical information sources and the problems encountered in the process of seeking and use of medical information.

The specific objectives of the study are:

1. Identifying sources and types of medical information available in the University of Ilorin Teaching Hospital library.
2. Identifying job-related needs of medical practitioners in the University of Ilorin Teaching Hospital.
3. Investigate the information use patterns of medical practitioners in the hospital.
4. Determining the problems encountered while seeking information by medical practitioners in the hospital.
5. Identifying preferred sources and types of information used by medical practitioners in the hospital.
6. Determining the adequacy of library resources in the hospital.
7. Determining the information seeking and use patterns of medical practitioners in the hospital compared to their colleagues in other hospitals.

Based on the objectives stated above, the following research questions will be answered by the study.

1. What are the information sources and types being consulted by medical practitioners?
2. What are job-related types of medical information available in the University of Ilorin Teaching Hospital library?
3. What are information seeking and use patterns of medical practitioners at University of Ilorin Teaching Hospital?
4. What are the problems associated with seeking and use of information by medical practitioners at University of Ilorin Teaching Hospital?
5. What are the preferred information sources and types for medical practitioners?
6. What is the level of adequacy of available information sources at University of Ilorin Teaching Hospital?
7. What effect has information seeking and use made on medical practitioners at the University of Ilorin Teaching Hospital compared to their colleagues in other hospitals.

**Scope of Study**

This study focused on the University of Ilorin Teaching Hospital and its medical practitioners including doctors, nurses, laboratory technologists, radiologists, ophthalmologists, dentists, and pharmacists. The study will cover only medical practitioners at the General Hospital wing and will not include the maternity hospital wing, because the General Hospital wing houses the largest population of medical practitioners of the entire Teaching Hospital. It also examines areas of information needed for delivery of comprehensive health services by medical practitioners in the Teaching Hospital and ways through which they are being sought and used.

**Review of Related Literature**

Aina (2002), Salman (2002), and Popoola (2003) observe that information is the accumulated or cumulative knowledge obtained from different subjects in all forms and from all channels that can assist in rational decision-making. Information can also be used to solve problems arising from daily routines among professionals and make them more creative and innovative. Tahir, Mahmood, and Shafique (2008) acknowledge that the knowledge of information needs and information-seeking behaviour of users is vital for developing library collections, upgrading facilities, and improving services to effectively meet the information needs of users. Electronic information retrieval systems are an important aspect of information seeking and use (Hjorland 2000).

Leckie, Pelligrew, and Sylvain (1996) posited that the primary focus of many nurses is patient care, a role that creates tasks requiring information deliverable in specific formats. Akinade (2000) points out that the users of a medical library are predominantly people in the fields of medicine, dentistry, pharmacy, nursing, biomedical sciences, and public health. Medical practitioners, in order to work together, require digital and electronic information.

Books, journals, audiovisual media, and other electronic resources can be used to disseminate information to professionals (Ogunronbi, 2001). Doctors’ information needs, especially those related to patient care, may vary widely from one doctor to the other. Murray (1992) confirms that the use of the library increases with recency of training and consultation with colleagues and decreases as doctors grow older. The use of various information sources is as a result of factors that include types of practices, specialty, location of practice, professional age, and the size of hospitals, as confirmed in the studies by Gruppen, Walf, Van Voorhees, and Stross (1987).

Information seeking in the medical and health related fields has proved to be a fruitful area of research, with considerable attention to sources of information, both formal and informal. Patients or health-conscious citizens use books, journals, Medline, video, and audio recordings. Mabawonku and Atinmo (1980) assert that information which is presented pictorially improves learning in some circumstances, which can improve information use by medical practitioners. Johnson and Meischke (1993) note that individual information seeking has become a critical element in determining health behaviours. Numerous studies have shown that various types of professionals perceive their own collection to be the most accessible and will use those collections even if the information is rather limited, including Gbadamosi (2001), Igbeka and Atinmo (2001), Gbadamosi (2004), and Bello and Musa (2003). Studies of medical practitioners by Woolf and Benson (1991) have shown that they
prefer to seek information from personal or office collections of known books and journals before going elsewhere to look for information.

Many constraints prevent medical practitioners from obtaining needed information. Chiefly among them, as enumerated by Musa and Omopupa (2005), are the lack of academic challenges that require going to the library, time constraints, and lack of loan facility in the library. Perhaps the most dominant barrier in information seeking and use or its applicability is accessibility. The view of relative accessibility of information can be influenced by physical proximity and by considerations such as the language used to convey the information (Ogunronbi, 2001).

**Research Design**

Survey research was used in this study to gather relevant information and it findings can be generalized to the total population. The research design also includes the collection of data related to information seeking behaviour and use by medical practitioners at University of Ilorin Teaching Hospital.

**Study Population**

The target population of this study is medical practitioners at the University of Ilorin Teaching Hospital. That number, according to the Hospital Registry Record, is 979. The population includes medical consultants, 85; resident doctors 180; house officers 120; nurses 513; pharmacists 35; laboratory technologists 46. A purposive sample of 255 respondents, representing 25% of the population, represents the sample for the study.

**Data Collection Instrument**

The questionnaire designed for this study was divided into four parts. The first part (Section A) collected personal data of respondents including academic qualification and rank. The second part (Section B) focused on information needs and use. The third part (Section C) contained information seeking behaviour and sources, irrespective of format. The fourth part (Section D) was structured to obtain information on the frequency and problems of seeking and use of information. Two hundred and thirty copies of questionnaires were returned, a response rate of 90%.

**Method of Data Analysis**

The methods of data analysis include frequencies, percentages, tabulation, and descriptive statistics. The responses were recorded and analysed with SPSS software.

**Results**

Table 1: Acquisition of Medical Information

Table 1 indicates that acquisition of medical information is paramount to medical practice.

Table 2: Types of Medical Information Sources

Table 2 shows that nearly half of respondents consult journals for their medical information needs, followed by smaller numbers who used books and Medline. The tradition of total reliance on books is shifting to journals and Medline that are more current in their contents.
Table 3: Adequacy of Medical Information Resources

Table 3 shows that most respondents found the hospital's information resources to be adequate.

Table 4: Most Used Information Resources

Table 4 shows that personal collections of information resources were ranked higher than other information resources. Medical practitioners in the University of Ilorin Teaching Hospital make use of personal information sources because of their proximity.

Table 5: Information Resources Consultation

Table 5 shows that more than half of respondents frequently consult information resources in the discharge of their medical duties.

Table 6: The Effectiveness of Medical Information

Table 6 indicates a large majority of respondents find medical information resources made them highly effective in the discharge of their medical duties.

Table 7: Information Seeking Behaviour and Use

Table 7 shows that a large majority of respondents agree that their information seeking and use behaviour has changed since their appointment in the University of Ilorin Teaching Hospital.

Table 8: Sources of Information

Table 8 reveals that a nearly equal number of respondents use information resources from the hospital library and from their personal collections.

Table 9: Problems Affecting Use of Medical Information

Table 9 indicates that poor awareness of the importance of information and inadequate qualified information personnel were factors responsible for ineffectiveness in seeking and use of medical information resources.

TABLE 10: Rating of Available Medical Information

Table 10 reveals that about one quarter each of respondents found information services to be professional and friendly, found available medical information resources to be timely, and agreed that available medical information was accessible, while a similar number indicated that available medical information resources in the University of Ilorin Teaching Hospital are accurate to their information seeking and use.

Table 11: Problems of Information Seeking and Professional Performance

Table 11 shows that a large majority of respondents found that information problems affect their professional performance.
Summary of Findings

The study investigates information seeking behaviour and use of medical information resources by medical practitioners at University of Ilorin Teaching Hospital with a view to improving it for better services by medical practitioners. Application of information for discharge of medical duties will not only assist users but beneficiaries of medical services. Consequently, this gesture is not only serving medical practitioners but the entire community of patients too.

Acquisition of information is important to medical practitioners either as personal collection or in a library or information centre. Medical practitioners prefer journals and Medline.

The findings equally show that the majority of respondents agreed on the adequacy of medical information resources. The hospital library and personal collections are not only close to the practitioners but relevant to their needs.

While ranking factors affecting effectiveness of information seeking and use by medical practitioners, result shows that lack of interest and poor awareness ranked highest. Qualified information personnel should be recruited to staff the information service points in the hospital. Information availability as shown in the results reveal that medical practitioners enjoy the available information while seeking and using them in terms of professional friendliness, timeliness, accessibility, and accuracy.

Possible solutions were offered to the problems of information seeking and use behaviours by the medical practitioners include provision of adequate funds, provision of qualified librarians and information specialists.

Recommendations

Based on the findings of this study the following conclusions are made:

- Librarians should endeavour to make their services more attractive to the medical practitioners. Libraries are established to serve by stocking more relevant information materials in various formats. In addition they are meant to provide current awareness services and selective dissemination of information in the areas of medical information.
- Medical practitioners should be encouraged to visit and use library materials, especially audiovisual and other non-book materials. Medical practitioners should be remunerated and encouraged to develop their personal collections.
- Hospital management should organize seminars, conferences, and symposia on information sciences and on how to improve medical practitioners' information and use behaviour. Book fairs where medical texts and other materials can be displayed to provide information materials and face-to-face interaction with sellers of medical books on how to foster a permanent relationship between medical practitioners and suppliers of medical information should be encouraged.
- Fund should be made available to librarians to buy necessary materials. Medical practitioners should also be encouraged to acquire personal collections. Librarians in the hospital must be specialised in the areas of medical information. Chairs, tables, and shelves should be arranged to make life more comfortable for users. Lastly, the opening hours of the libraries should be arranged to suit the convenience of medical practitioners since they work in shifts.
References


Appendix 1

TABLE 1. Is the acquisition of medical information important to you?

<table>
<thead>
<tr>
<th>S/N</th>
<th>Respondents</th>
<th>No %</th>
<th>No %</th>
<th>No %</th>
<th>No %</th>
<th>No %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Consultants</td>
<td>9</td>
<td>4.1</td>
<td>15</td>
<td>6.6</td>
<td>17.4</td>
</tr>
<tr>
<td>2.</td>
<td>Resident Doctors</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>1.7</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>House officers</td>
<td>4</td>
<td>1.7</td>
<td>9</td>
<td>4.1</td>
<td>2</td>
</tr>
<tr>
<td>4.</td>
<td>Nurses</td>
<td>6</td>
<td>26.4</td>
<td>70</td>
<td>30.6</td>
<td>2.5</td>
</tr>
<tr>
<td>5.</td>
<td>Lab. Scientists</td>
<td>4</td>
<td>1.7</td>
<td>8</td>
<td>3.3</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Pharmacists</td>
<td>6</td>
<td>2.5</td>
<td>12</td>
<td>5.0</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>84</td>
<td>36.4</td>
<td>128</td>
<td>51.3</td>
<td>27</td>
</tr>
</tbody>
</table>

TABLE 2. What types of medical information sources are known to you?

<table>
<thead>
<tr>
<th>S/N</th>
<th>BOOKS</th>
<th>JOURNAL</th>
<th>MAGAZINES</th>
<th>MEDLINE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Respondents</td>
<td>No %</td>
<td>No %</td>
<td>No %</td>
<td>No %</td>
</tr>
<tr>
<td>1.</td>
<td>Consultants</td>
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<td>3.3</td>
<td>26</td>
<td>11.6</td>
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<td>2.</td>
<td>Resident Doctors</td>
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<td>-</td>
<td>4</td>
<td>1.7</td>
</tr>
<tr>
<td>3.</td>
<td>House officers</td>
<td>2</td>
<td>0.8</td>
<td>6</td>
<td>2.5</td>
</tr>
<tr>
<td>4.</td>
<td>Nurses</td>
<td>40</td>
<td>17.4</td>
<td>47</td>
<td>20.7</td>
</tr>
<tr>
<td>5.</td>
<td>Lab. Scientists</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>3.3</td>
</tr>
<tr>
<td>6.</td>
<td>Pharmacists</td>
<td>2</td>
<td>0.8</td>
<td>15</td>
<td>6.6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>51</td>
<td>22.3</td>
<td>106</td>
<td>46.4</td>
</tr>
</tbody>
</table>

TABLE 3. How adequate are the medical information resources in your hospital library?

<table>
<thead>
<tr>
<th>S/N</th>
<th>V.A</th>
<th>F.A</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Respondents</td>
<td>No %</td>
<td>No %</td>
</tr>
<tr>
<td>1.</td>
<td>Consultants</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>2.</td>
<td>Resident Doctors</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>House officers</td>
<td>2</td>
<td>1.8</td>
</tr>
<tr>
<td>4.</td>
<td>Nurses</td>
<td>27</td>
<td>11.6</td>
</tr>
<tr>
<td>5.</td>
<td>Lab. Scientists</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Pharmacists</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>31</td>
<td>14.2</td>
</tr>
</tbody>
</table>
TABLE 4. Which of the following information resources do you use most in the discharging of your profession?

<table>
<thead>
<tr>
<th>Information Resources</th>
<th>Book</th>
<th>Journal</th>
<th>Medical colleagues</th>
<th>Medical online facility</th>
<th>Medical reference books</th>
<th>Personal collection</th>
<th>Govt and NGO Collection</th>
<th>Patient Medical Records</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of Respondents</td>
<td>19</td>
<td>24</td>
<td>27</td>
<td>27</td>
<td>32</td>
<td>36</td>
<td>31</td>
<td>34</td>
<td>230</td>
</tr>
<tr>
<td>Percentage of respondents</td>
<td>8.2</td>
<td>10.3</td>
<td>11.6</td>
<td>11.9</td>
<td>14.0</td>
<td>15.5</td>
<td>13.4</td>
<td>15.1</td>
<td>100</td>
</tr>
</tbody>
</table>

TABLE 5. How often do you consult information resources?

<table>
<thead>
<tr>
<th>S/N</th>
<th>Respondents</th>
<th>VERY FREQUENTLY</th>
<th>FREQUENTLY</th>
<th>INFREQUENTLY</th>
<th>NOT AT ALL</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>%</td>
<td>No</td>
<td>%</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>1.</td>
<td>Consultants</td>
<td>9</td>
<td>4.1</td>
<td>24</td>
<td>10.7</td>
<td>6</td>
</tr>
<tr>
<td>2.</td>
<td>Residents</td>
<td>2</td>
<td>0.8</td>
<td>2</td>
<td>0.8</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>House officers</td>
<td>2</td>
<td>0.8</td>
<td>12</td>
<td>5.0</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>Nurses</td>
<td>26</td>
<td>11.6</td>
<td>62</td>
<td>27.3</td>
<td>40</td>
</tr>
<tr>
<td>5.</td>
<td>Lab. Scientists</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>3.3</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>Pharmacists</td>
<td>-</td>
<td>-</td>
<td>17</td>
<td>7.4</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>17.3</td>
<td>125</td>
<td>54.5</td>
<td>56</td>
<td>24.1</td>
</tr>
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</table>

TABLE 6. How would you rate the effectiveness of medical information to your job?

<table>
<thead>
<tr>
<th>S/N</th>
<th>Respondents</th>
<th>V H</th>
<th>H</th>
<th>F</th>
<th>FA</th>
<th>POOR</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>1.</td>
<td>Consultants</td>
<td>2</td>
<td>.8</td>
<td>8</td>
<td>3.3</td>
<td>28</td>
<td>12.4</td>
</tr>
<tr>
<td>2.</td>
<td>Resident Doctors</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>1.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>House officers</td>
<td>2</td>
<td>.8</td>
<td>9</td>
<td>4.1</td>
<td>4</td>
<td>1.7</td>
</tr>
<tr>
<td>4.</td>
<td>Nurses</td>
<td>40</td>
<td>17.4</td>
<td>66</td>
<td>28</td>
<td>29</td>
<td>12.4</td>
</tr>
<tr>
<td>5.</td>
<td>Lab. Scientists</td>
<td>-</td>
<td>-</td>
<td>6</td>
<td>2.5</td>
<td>2</td>
<td>.8</td>
</tr>
<tr>
<td>6.</td>
<td>Pharmacists</td>
<td>2</td>
<td>.8</td>
<td>4</td>
<td>1.7</td>
<td>9</td>
<td>4.1</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>20.097</td>
<td>42.2</td>
<td>71</td>
<td>31.4</td>
<td>16.67</td>
<td>230</td>
</tr>
</tbody>
</table>

TABLE 7. Do you agree that your information seeking behaviour and use has changed since your appointment in this hospital?
<table>
<thead>
<tr>
<th>S/N</th>
<th>Respondents</th>
<th>V</th>
<th>HIGH</th>
<th>HIG</th>
<th>FAIR</th>
<th>POOR</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Consultants</td>
<td>9</td>
<td>4.1</td>
<td>13</td>
<td>5.8</td>
<td>19</td>
<td>8.3</td>
</tr>
<tr>
<td>2.</td>
<td>Resident Doctors</td>
<td>2</td>
<td>0.8</td>
<td>2</td>
<td>0.8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>House officers</td>
<td>3</td>
<td>0.8</td>
<td>2</td>
<td>3.3</td>
<td>4</td>
<td>3.3</td>
</tr>
<tr>
<td>4.</td>
<td>Nurses</td>
<td>30</td>
<td>13.2</td>
<td>66</td>
<td>28.9</td>
<td>32</td>
<td>14.07</td>
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<td>Lab. Scientists</td>
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<td>0.8</td>
<td>8</td>
<td>3.3</td>
<td>3.3</td>
<td>1.7</td>
</tr>
<tr>
<td>6.</td>
<td>Pharmacists</td>
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<td>1.7</td>
<td>8</td>
<td>3.3</td>
<td>8</td>
<td>3.3</td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>21.4</td>
<td>45.4</td>
<td>69</td>
<td>29.77</td>
<td>3.0230100</td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 8. To what extent is your information pattern different from other professional colleagues in other hospitals?**

<table>
<thead>
<tr>
<th>S/N</th>
<th>Respondents</th>
<th>SAA</th>
<th>DS</th>
<th>SD</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Consultants</td>
<td>12</td>
<td>5.0</td>
<td>23</td>
<td>9.9</td>
</tr>
<tr>
<td>2.</td>
<td>Resident Doctors</td>
<td>2</td>
<td>0.8</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>3.</td>
<td>House officers</td>
<td>2</td>
<td>0.8</td>
<td>9</td>
<td>4.1</td>
</tr>
<tr>
<td>4.</td>
<td>Nurses</td>
<td>25</td>
<td>10.7</td>
<td>97</td>
<td>42.1</td>
</tr>
<tr>
<td>5.</td>
<td>Lab. Scientists</td>
<td>4</td>
<td>1.7</td>
<td>6</td>
<td>2.5</td>
</tr>
<tr>
<td>6.</td>
<td>Pharmacists</td>
<td>9</td>
<td>4.1</td>
<td>9</td>
<td>4.1</td>
</tr>
<tr>
<td>Total</td>
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<td>23.47</td>
<td>146</td>
<td>63.47</td>
<td>28</td>
</tr>
</tbody>
</table>

**TABLE 9. Where Do You Normally Get Your Professional Information?**

<table>
<thead>
<tr>
<th>S/N</th>
<th>Respondents</th>
<th>HOSPITAL LIBRARY</th>
<th>PERSONAL COLLECTION</th>
<th>OTHER LIBRARIES</th>
<th>FROM COLLEAGUES</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>5.8</td>
<td>24.61</td>
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<td>1.84</td>
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<tr>
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<td>Resident Doctors</td>
<td>1.04</td>
<td>0.8</td>
<td>2</td>
<td>1.84</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>House officers</td>
<td>11.5</td>
<td>5.0</td>
<td>1.84</td>
<td>0.8</td>
<td>1.84</td>
</tr>
<tr>
<td>4.</td>
<td>Nurses</td>
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<td>23.1</td>
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<td>21.5</td>
<td>7.59</td>
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<td>Lab. Scientists</td>
<td>7.59</td>
<td>3.3</td>
<td>3.91</td>
<td>1.7</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Pharmacists</td>
<td>3.91</td>
<td>1.7</td>
<td>11.5</td>
<td>5.0</td>
<td>-</td>
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<tr>
<td>Total</td>
<td>92</td>
<td>39.7</td>
<td>93</td>
<td>40.5</td>
<td>11</td>
<td>4.9</td>
</tr>
</tbody>
</table>
TABLE 11. How Would You Rate The Medical Information Available To You in Terms Of Timeliness, Accuracy, Accessible And Professional Friendly?

<table>
<thead>
<tr>
<th>TIMELINESS</th>
<th>ACCURACY</th>
<th>ACCESSIBLE</th>
<th>PROFESSIONAL FRIENDLY</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO 61</td>
<td>50</td>
<td>54</td>
<td>65</td>
<td>230</td>
</tr>
<tr>
<td>% 26.4</td>
<td>22.1</td>
<td>23.4</td>
<td>28.1</td>
<td>100</td>
</tr>
</tbody>
</table>

TABLE 12. Do You Agree That The Aforementioned Problems Have Affected Your Professional Performance?

<table>
<thead>
<tr>
<th>S/N</th>
<th>Respondents</th>
<th>SAA</th>
<th>DS</th>
<th>SD</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Consultants</td>
<td>5 2.5 29 12.4</td>
<td>3.3</td>
<td>-</td>
<td>-</td>
<td>42 18.2</td>
</tr>
<tr>
<td>2. Residents Doctors</td>
<td>2 0.8 2 0.8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4 1.7</td>
</tr>
<tr>
<td>3. House officers</td>
<td>4 1.7 9 4.1 2</td>
<td>0.8</td>
<td>2</td>
<td>0.8</td>
<td>17 7.4</td>
</tr>
<tr>
<td>4. Nurses</td>
<td>27 11.6 79 34.7</td>
<td>30 13.2</td>
<td>-</td>
<td>-</td>
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Introduction

Some historians believe that the use of technology in libraries began with the introduction of the Dewey Decimal System, which is now used throughout the world for the physical arrangement of library materials, especially in public libraries” (Rayward). Around the same time, the development of card catalogs to manage library information was also a step forward in the use of technology. The use of these systems prepared libraries for computers to revolutionize the cataloging and other kinds of record-keeping. If libraries had not already been organized in such a way, computerization would have been more difficult to implement. Rayward believes that the professionalism of librarians, which began in the late 19th and early 20th centuries helped libraries handle technology as it became more and more prominent in libraries. “Libraries across the country were organized in similar ways to support common systems and processes” (Rayward). Next came the invention of the first computer that could be used within the library system. The thought of using this technology in libraries was spearheaded by the International Federation of Library Associations (IFLA) in 1964. At the time IBM had introduced the 360 series, which moved large mainframe computers into the mainstream. Due to the availability of mainframe computing, IFLA created several new committees, one of which was on automation of libraries. Even though the computers were very large and comparatively crude, the potential for use with the repetitive library tasks was evidence. During IFLA Mechanization Committee meetings in the 1960s, many automation reports were shared with topics such as; “acquisitions, accession lists, indexing, serials control, circulation, and book catalogue production” (McCallum). Unfortunately, the early database computers were better used for number crunching than linguistic or text-based programs.

1970s

In the 1970s as interest in library automation grew, the topics changed to data formats such as MARC format and ISBD, a standard for description. The committee also discussed user reactions to automation and the handling of large data banks that were being created. The Mechanization Committee members worried about the compatibility of different computer systems. In the early 1970s, the committee recognized that “standardization is one of the important problems of mechanization” (McCallum). By the end of the 1970s, the Committee on Mechanization became the Section on Information Technology (IT).

1980s

The 1980s brought the development of national networks. There was even talk of international networks with research being done on “the potential and problems of networking across national boundaries” (McCallum). The protection of private personal information was brought to the fore during this time. In addition to networking issues, other technologies were also
being tried in the eighties. “Vanderbilt adopted NOTIS, a mainframe library management system with fully automated circulation” (Breeding). This system used barcodes placed on material available for checkout. It also allowed libraries to control the circulation period of materials. It kept track of overdue items and printed both courtesy notices and overdue notices. Among the new technologies were Videodiscs and CDROMs. Videodisc technology was tested for ease of use and CD-ROMs were tried to see if they could carry resources and hold the data contained in library catalogues. During the late 1980s protocols for linking dissimilar computer systems was a major issue. The IFLA Section on Information Technology began looking at different electronic document delivery strategies. The Online Public Access Catalog (OPAC) became the goal that many libraries strived to reach during this time. This meant that records for catalogs needed to be in electronic form and compatible with different systems. Along with using technology in everyday tasks, it also became necessary to use technology in the training of new librarians. New librarians were expected to be computer-literate. “As a result, librarians need to teach literacy in both finding and evaluating information in the best use of computers. This can get complicated and can place the librarian into unfamiliar teaching situations. Librarians need to stay abreast of developments in computers and learn them early so they can teach patrons” (Lorenzen). Another important technology that emerged in the eighties was 3M tattle-tape placed in books to eliminate theft.

1990s

Enter the 1990s and the Internet appears. The Internet created protocols for patrons using the Internet, communications options, navigational tools, and website construction. At the same time, “the Internet and World Wide Web have also confused many patrons” (Lorenzen). It is important to have library staff trained in safe and secure use of the Internet to help patrons who struggle in this area. This brought about its own set of problems; what were the parameters of Internet use for both patrons and staff? What was acceptable use? How do you limit a patron’s time on the Internet so that all individuals have equal time? How do you fund the equipment necessary to provide the Internet to the users? These were all topics of debate during the nineties on the use of the Internet within the public library. Preservation of digital media emerged as an issue during this time. “It seems appropriate to label the period in the history of library automation, and of librarianship more generally, from the introduction of MARC to the current Internet and Web-based developments, the era of OCLC, both for its own sake but also as representing the many library networks and bibliographical utilities that emerged at this time” (Rayward).

The 21st Century

The beginning of the twenty-first has seen the introduction of wireless communication, videoconferencing, e-readers, iPods, iPads, and a plethora of hand-held gadgets that take pictures, talk, e-mail, search the web, read, and use apps. The use of technology within the libraries has drastically changed as well in the past decade. “Through the web, today’s users can review the items that are currently charged, perform renewals, request items that are charged to others, and set alerts so they can be notified when we acquire new materials of interest” (Breeding). There is interest in the self-service aspect of technology, represented by online banking, purchasing, and research. Libraries also offer self-check stations where items can be scanned and the patron are able to take the items home without visiting a service desk. Another type of technology that has taken hold in the library world is radiofrequency identification (RFID) for materials. Each item is given an RFID tag which is programmed with an identifier. “The tag is programmed with both circulation and security functions” (Breeding). This technology gives libraries the opportunity to automate workflow. The tags can be read at some distance from the scanner, allowing multiple items to be read simultaneously, which means that a pile of ten library books can be checked out or in without having to handle each
item individually. This technology allows the library to use its staff more creatively, or in some libraries to reduce staff to help balance dwindling budgets. Circulation is not the only library service that is changing. There are libraries who allow patrons to check out Nooks and use iPads in the building. Some libraries have game nights where children and adults can come and play games on the Wii, PlayStation, and Xbox. There are libraries in Ohio that offer Guitar Hero and Dance Revolution tournaments. Many libraries lend games for different platforms. An outside program named Library Elf helps patrons keep track of materials they have checked out. “This service enables library users to enter their library card information for all participating libraries and set up e-mail and cell phone alerts to let them know if they have items that are due soon, if an item they have placed on reserve is now available and if they (and their children) have overdue materials” (Lea and Shofar). Libraries are answering the call to provide all people with access to information, which in the end should be the goal of all libraries. “Responding to the growing popularity of electronic book readers, Bosler Library already offers eBooks from the OverDrive Book Collection and downloadable spoken books on our website” (Bosler Library). Many libraries offer e-books through readers on their websites. The difficult part of this equation is the cost of all the technological advances compared to the decreasing library budgets of the current economy. With budget cuts and the rising cost of technology, how will libraries survive? Some will close while others will thrive. The difference is the people involved, including library staff and the community as a whole. If the community believes and realizes what an important part libraries play in society, they will find ways to fund them and make sure they are operated by qualified librarians. That makes marketing essential. Weingand observes that the products a library produces are their collections, services, and programs. The need to make the library a welcoming place with plenty of resources is also the librarian’s goal. “Customer service is the final intent and result of all the library’s products - no matter how small the library” (Weingand). To keep providing the best possible service, libraries must change continuously.

The Future

Into the future with technology is an exciting but scary proposition. What changes will be made and what will happen to the library buildings of today? Will they become a thing of the past as more and more people choose to access e-readers and the Internet for their information? Or will they become meeting places where people gather to discuss current events, use the technology available, and interact with others? “The obvious changes to anticipate involve major shifts toward digital formats, distributed through license arrangements, rather than physical materials available for purchase” (Breeding). Does this mean that we will no longer record and keep records of the literature available for future generations? Breeding proposes that libraries and users will no longer own the video or book but will rent it for a time. Will certain books be only available on the Internet since printing them might seem like a waste of paper? While the distribution of literature is changing at an alarming rate, I believe movie and videos are changing even faster. “Streaming video services, which are gaining steam today, will dominate entirely in the years and decades to come” (Breeding). If many materials are electronic, there must be a multitude of computers or similar readers available. There will be small rooms where people can congregate and discuss current events while accessing the technology available. Depending on the library, there might not be as much print, since most information will be available online. Once content is fully digital, many of the distinctions previously made in formats will blur. “Once freed from the association with the printed page, for example, books will no longer be tied to text and still images but might come with enhanced video content and other built-in multimedia features” (Breeding). The question of long-term access and preservation remains important. “Today when I buy a printed book, a movie published on DVD, or music published on a CD, I can do with it as I please, including lending it to a friend, giving it away, or selling it. Such may not be the case at all in the all-digital future, where consumers license access to content rather than purchase a copy fixed onto some physical media. License agreements
may, or may not, allow me to share, transfer, sell, or give away my access” (Breeding). How will the libraries afford the fees if they are paying per use? There are some types of technology that are currently being used in libraries that are powerful and specialized, such as GIS. "There are other uses of Geographic Information System software that may be of interest to library managers. For example, because GIS allows one to view many geographic data sets in one environment, the software also permits research and analysis into aspects of regional or national library policies that may be difficult to perform in other analytical environments" (Koontz and Jue). This idea has been around since the 1960s, but the cost was prohibitive for use in libraries. "For retailers the two basic functional uses of GIS are market profiling and location analysis. Marketing requires a detailed breakdown of the socio-economic and demographic status of immediate locales, the surrounding population, and subsequent estimation of the geographic market range" (Koontz and Jue).

Conclusion

Technology has made a huge difference in the time employees spend recirculating, ordering, and organizing materials in libraries. Electronic devices and the Internet have enhanced the patron’s visits to the library by allowing them to access videos, e-mail, e-books, and research topics. During these hard economic times, some patrons simply cannot afford Internet access in their homes, and use the computers at the library to keep connected with family and friends. The human element remains important in libraries. While some individuals love using the self-checkout options, there are still people who relate better to human interaction than technology. There is a fine line between the technology libraries can afford to purchase and the technology to keep people coming through the door. With the multitude of technological advances, where does the library spend its limited budget? "Many libraries must defer replacements or upgrades of their automation systems, regardless of how desperate the need" (Breeding). One way to deal with limited budgets is to slowly introduce different types of technology into the library setting and see what the patrons find most useful. To remain the center for Intellectual Freedom and the freedom of access to information while providing great customer service, libraries must make difficult choices. This is why it is so important to complete a community study and a long term plan.

Bibliography


