Search and discovery: challenges and opportunities in our libraries

Laila Vahed and Nora Buchanan

As we enter the second decade of the 21st century, librarians (and other information professionals) whose task it is to search for, discover and access scholarly information find themselves running an ultra marathon on the information “superhighway”. The thirty years, from 1980 to date have been so profound a time of change in the information arena that many of us can identify with our counterparts of the time when books started rolling off Gutenberg’s printing press. The abundance of available books must have left the poor librarians feeling as overwhelmed as many of us feel today as we try to search out the exact information users want.

Many of us still have (sometimes painful) memories of heaving down tome after tome of indexes and abstracts in an effort to assist users with their literature searches.

Although with less weightlifting involved, the micro-era still saw us searching those same indexes and abstracts at much the same speed. This was followed by tedious cross referencing, resulting in one search sometimes spanning several days in the quest for adequate results. And all this searching resulted only in the discovery of the metadata to the information – the references to the articles or books. Thereafter the onerous task began of finding out from where the information could be sourced. Hopefully the resources were held in one’s home library but if not, we turned to other libraries and borrowed the items through interlibrary loans. This process could take up to four weeks and, if the item had to be sourced from a library overseas, it could take even longer.

At the centre of these activities was the librarian, who acquired the materials, organised them and then provided the researcher with the required information. The best academic libraries held a wide variety of reading materials and complete runs of a variety of scholarly journals to stimulate research and scholarship. Good librarians not only knew their own collections intimately but also knew where to find information not held in their collections.

In the 1970s online literature searching was introduced. Described as the “modern alternative to searching manually through indexes and abstracts for information”, it involved the use of a computer terminal linked via a telephone line to a remote database. How many librarians today remember acoustic couplers and the rush to insert the telephone receiver firmly into the rubber holders before the signal died? Searches had to be very carefully planned beforehand so as not to waste time and money; keywords had to be checked in thesauri and Boolean logic applied in order to accomplish the online search in the fastest possible time. An experienced and knowledgeable librarian was essential. Search results had to be mailed via the postal service and could take up to two weeks to reach the researcher. Again, the results provided references to the information, not the information itself. Further searching was still required to track down the full text articles or books.

Today, we can find “information at the touch of a button” but perhaps it has become too much information and too many buttons. Every month there is something new; there are new resources of information to supposedly assist us, and new ways to find information faster. So the race to

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1 J.W. Perry, University Librarian at the University of Natal, 1954 – 1961, referred, in his 1954 annual report, to the bibliographical references in the works by Vilfredo Pareto to support his argument that scholars require access to a wide variety of reading material.

2 C. Thumbadoo, Online bibliographic searching at the Science/Engineering Branch Library, Library news [Durban], no. 24, 1982, p. 3.
discover information has become an ultra marathon and the road to information has become the superhighway.

What has the role of the librarian become? Are we still confident that we are central to the search for information? We decided to find out what researchers really want from university libraries and librarians.

**Background**
The authors of this presentation come from very different institutions. Perhaps the only obvious commonality is that both are situated in the province of KwaZulu-Natal, on the eastern seaboard of South Africa.

The University of KwaZulu-Natal (UKZN) was formed on 1st January 2004 as a result of the merger of the former Universities of Durban-Westville (UDW) and Natal (UN). UDW was established in 1960 under the South African government’s *apartheid* policy specifically to provide university education to the Indian community in South Africa whereas UN, formerly the Natal University College, was established in 1910 to provide university education to the white community. Today UKZN is a multi-campus, urban university (there are four campuses in the City of Durban and one in the city of Pietermaritzburg, 90 kms west of Durban), categorised as “research-intensive” university.

The University of Zululand (UNIZULU) was also established in 1960 under the South African government’s *apartheid* policy to provide a university education to black persons (specifically the black people living in the area known as Zululand). The main campus is situated in the rural township of Kwa-Dlangezwa, about 150 kms north of Durban, and there is a very small new branch campus in nearby Richards Bay, an industrial and mining harbour town. It is categorised as a “comprehensive” university.

**A statistical overview**
The institutional statistics in the table below provide an overview of the differing sizes of the two institutions:

<table>
<thead>
<tr>
<th></th>
<th>UKZN</th>
<th>UNIZULU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student FTEs 2011</td>
<td>30,429</td>
<td>13,346</td>
</tr>
<tr>
<td>Academic staff/researchers (headcount)</td>
<td>3,960</td>
<td>249</td>
</tr>
<tr>
<td>Professional library posts</td>
<td>55</td>
<td>15</td>
</tr>
<tr>
<td>Ratio of librarians to researchers</td>
<td>72 researchers per librarian</td>
<td>16.6 researchers per librarian</td>
</tr>
</tbody>
</table>

*Table 1: Institutional statistics*

**The importance of research at the two institutions**

1. **University of KwaZulu-Natal**
   UKZN’s vision is to be “the premier university of African scholarship” and one of the main ways in which the institution seeks to give effect to this vision is in its research endeavours. The University has committed itself to support both needs-driven and curiosity-driven research and strives to “build a research ethos that acknowledges the responsibility of academic staff to nurture its postgraduate students and to be a pre-eminent producer of new knowledge that is both local and global in context ...”

   In the period 2008-2009, UKZN’s research output was the
third highest in South Africa and the University has retained its position in the top 500 universities in the Academic Ranking of World Universities list.\(^4\)

2. **University of Zululand**

The institution views research output as very important and has been making attempts to improve its research profile. The Senate is currently debating various incentive schemes to reward academics who promote research and who publish but many academics feel that their teaching loads hamper research productivity. The HEQC Institutional Audit report of 2010 noted a steady increase in research output in recent years and commended the University on the following:

- A significant increase in the number of African academics who produce research articles;
- The relatively high number of NRF rated researchers, within the context of rural based higher education institutions;
- An increase in research activity since 2005 particularly in those areas relevant to the development of Northern KwaZulu-Natal.\(^5\)

**The research question: what do researchers want?**

In order to identify the challenges and opportunities facing librarians, the authors decided to undertake a brief survey of the established researchers in both institutions in an attempt to answer this question. As a contrast, it was also decided to interview a few select subject/information librarians to establish their viewpoints on the topic.

**Methodology**

An interview questionnaire was designed with the following three questions:

1. What electronic resources do you use for research most often? Seven resources were listed with an additional category where respondents could name other databases. Respondents were also requested to describe their favourite features in any of the databases;
2. What are your expectations of the “ideal” electronic resource or database;
3. Do you see and value the role of librarians in assisting and supporting researchers? Respondents were asked to motivate their answers.

**Population surveyed**

1. **Librarians:** three information/subject librarians were identified from each institution to be interviewed. A broad range subject areas was represented, as shown in the table below:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Broad subject areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>UKZN Librarian 1</td>
<td>Law</td>
</tr>
<tr>
<td>UKZN Librarian 2</td>
<td>Medicine</td>
</tr>
<tr>
<td>UKZN Librarian 3</td>
<td>Social Sciences &amp; Business</td>
</tr>
<tr>
<td>UNIZULU Librarian 1</td>
<td>Applied Sciences &amp; Business</td>
</tr>
<tr>
<td>UNIZULU Librarian 2</td>
<td>Pure Sciences</td>
</tr>
<tr>
<td>UNIZULU Librarian 3</td>
<td>Social Sciences &amp; Arts</td>
</tr>
</tbody>
</table>

*Table 2: Librarians’ areas of expertise*

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\(^4\) *UKZN Research report 2008-2009.*

2. **Researchers:** in order to ensure equivalence across the two institutions it was decided to survey only those researchers who had been rated by the National Research Foundation (NRF). Accordingly, the respective Research Offices were requested to provide lists of NRF-rated researchers. The list provided by the UKZN Research Office listed 28 NRF-rated researchers (four of whom unfortunately could not be contacted) and the UNIZULU Research Office provided a list of ten NRF-rated researchers. The rated researchers of UKZN constitute a mere 0.7% of the total academic/research staff (28 out of 3,960) while at UNIZULU they constitute 4% of the total academic/research staff (10 out of 249).

Therefore of a total of 34 possible interviewees (24 UKZN + 10 UNIZULU), 16 responded to invitations and were successfully interviewed, nine of whom were from UKZN and seven from UNIZULU. The range of NRF ratings for the respondents was:

<table>
<thead>
<tr>
<th>NRF Rating</th>
<th>B3</th>
<th>C2</th>
<th>C3</th>
<th>Y2</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of researchers</td>
<td>2</td>
<td>11</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 3: NRF ratings of respondents

Briefly, the meanings of the ratings are as follows:

B: Researchers who enjoy considerable international recognition by their peers for the high quality and impact of their recent research outputs;
C: Established researchers with a sustained recent record of productivity in the field who are recognised by their peers as having produced a body of quality work...
Y: Young researchers (normally younger than 35 years of age) who have held the doctorate or equivalent qualification for less than five years at the time of application, and who are recognised as having the potential to establish themselves as researchers within a five-year period ...

The 16 respondents also represented a range of disciplines:

<table>
<thead>
<tr>
<th>Arts &amp; Social Sciences</th>
<th>Agriculture</th>
<th>Medicine/Health Sciences</th>
<th>Pure Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 4: Researchers’ areas of expertise

**Findings**

As is shown in the graph below, the database most used by researchers is Google. Two researchers stated that Google is “useful for finding out what’s out there,” and a third, while insisting he did not use Google, made several comments during the interview that made it quite obvious that he did! Science Direct and Google Scholar were second, followed by the Web of Science which was found to be particularly useful for its citations. Surprisingly, the librarians interviewed were not so keen on Google (perhaps they did not want to admit it!) but all used ScienceDirect.

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6 The list sent by the Research Office was limited to those researchers who had recently been rated by the NRF.

7 National Research Foundation, *Definition of rating categories*. 
Researchers’ expectations were classified into 12 requirements. Unsurprisingly, nearly everyone wants to access full text articles. One researcher stated, “I want the library on my desk!” Many also require a simple interface and half of the interviewees preferred a single point of access to all databases. It seems odd that only three thought that it was important to have access to the most current articles although perhaps the others took it for granted that access to a database means that you will automatically retrieve the most current information.

As far as the librarians were concerned, all expected to find full text, most wanted a single point of access and four considered citations important. Other points mentioned were an easy interface with bibliographic management tools such as EndNote and RefWorks, a facility for setting up alerts and the facility to e-mail references and full-text articles (important if one is asked to undertake a search on behalf of a user).
may not immediately recognise that it has been the librarian who has made this possible. Juggling an inadequate budget, negotiating with university IT divisions and dealing with firewall issues are the job of the librarian.

All the researchers surveyed recognised that a definite role for the librarian still exists in today’s wired information world. Procuring resources, offering training, making these resources accessible and outreach were seen as key roles for the librarian. However, as far as searching for and discovering information was concerned, the researchers had a “hands off” attitude. This can largely be attributed to the fact that the interviewees were well versed in their fields and knew the all the vital resources as well as being aware of the relevant experts. They felt that the librarian could play an essential role in assisting more junior researchers and postgraduate students but that it was unlikely that a librarian could add value to their own quests for information. Two researchers stated flatly that, “I don’t use librarians!” although the one mentioned that he used the interlibrary loan facilities.

Some of the comments made were:
- I know my field; I know my journals and I know my competitors – C2-rated researcher, Chemistry, UNIZULU;
- I know what journals publish good articles in my field ... I get alerts ... If there is no full text I just e-mail the author – C2-rated researcher, Agriculture, UNIZULU;
- I don’t use librarians but my graduate students should! New researchers find it difficult to build up their reading lists and difficult to do literature reviews so that’s where librarians can really help – C2-rated researcher, Development Studies, UKZN;
- I don’t need librarians to help me, although I’m grateful for all the stuff you buy and I like your website, but I do like them to train my students. It would be useful if the librarian could help me with cross-disciplinary research e.g. finding relevant articles in the medical field for me to use in my own research because I’m not familiar with medical terminology – C2-rated researcher, Agriculture, UKZN;
- Librarians need to take the lead in promoting access and retrieval ; the librarian should be introduced to students in their 1st year ... many students go through their studies without fully utilising online resources ... – B3-rated researcher, Medicine, UKZN;

An interesting comment from a young researcher was:
- I’m involved in systematic reviews; it would be great to get the librarian involved in advanced searches – Y2-rated researcher, Nursing, UKZN.

The librarians interviewed saw themselves as expert intermediaries in the information search process. All six agreed that they were in a unique position to help younger researchers to acquire necessary skills and to gain the maximum benefit from the information resources available. Two considered that librarians need to become more knowledgeable, a point which ties up with the comments of the UKZN researcher who felt he would like the librarian to assist him with search terminology in unfamiliar disciplines. Interestingly, one of the UKZN librarians considered that librarians should also be familiar with the institutional processes behind the research and supervisory process in order to be better able to guide postgraduate students through the bureaucratic minefield of university regulations.

Summary
We posed the following questions at the beginning of this paper:
- What has the role of the librarian become? and,
- Are we still confident that we are central to the search for information?
The answer to the first question is that the role of the librarian has not changed; we still make every effort to apply Ranganathan’s fourth law of library science, “Save the time of the reader”\(^8\) by working to create a seamless, barrier-free support system for research and according to the researchers’ comments, we are succeeding. The answer to the second question is a little more complex. It is obvious that, as far as the seasoned researchers are concerned, our value is virtual. They are pleased that we provide them with the information resources they need but do not feel they have need of our expertise. As far as they are concerned, we can remain undercover!

However, a golden opportunity exists for librarians to partner junior researchers and postgraduate students in their race to becoming seasoned researchers. As seasoned information ultra-marathoners, librarians enjoy the unique privilege of being able to guide young researchers on the information superhighway.

\(^8\) S.R. Ranganathan, *The five laws of library science*, p. 287.
Works cited


