



Building an information literate research community

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Abstract

In response to the changing research landscape in Australia, Charles Darwin University Library in the Northern Territory has developed a series of services and resources to meet the special needs of its growing research community. In particular, a range of workshops, specialised and general, face-to-face as well as online have been developed and are supplemented by a research consultation service to support the wide range of researchers based both on and off campus, in the Northern Territory as well as interstate (within Australia) and overseas. The main aim of group and individual support is to help researchers become information literate, so that they are able to work more independently, and in this way are able to achieve an increased level of success in their research endeavours. In rising to meet this challenge, library staff have themselves had to upgrade their own skills and competencies. The impact of the support being provided has been measured through a survey questionnaire followed by focus group discussions. Feedback is also obtained regularly from workshop participants through an evaluation form. In order to meet researchers' needs, Library staff have successfully used both formal and informal methods of professional development on an ongoing basis in order to bridge any gaps that are identified.

Background

Charles Darwin University (CDU) is located in the Northern Territory of Australia. It is a comparatively small regional university. More than half of its 21,236 students are engaged in external study mode and are dispersed over its wider region and beyond, both interstate as well as overseas. Of the total student population, 78 % are part-time and 22 % are full-time (CDU, 2010). The main campus, Casuarina Campus, is based in Darwin in the Top End of the Northern Territory with a number of smaller campuses and centres scattered throughout the 1.4 million km² land mass. This is more than four times the size of Finland, with a total population similar to that of Tampere at 231,200.

The changing research landscape in Australia in recent years has propelled universities to realign their focus in tandem with nationwide developments. From the mid-2000s and onwards, the Australian Government introduced a number of initiatives to assess the quality of research being carried out at universities. These initiatives were regarded as being significant as they in turn determined the level of funding universities would receive from the federal government for research activities.

Change was therefore signalled in the level and extent of services being provided by those offices of the University providing research support. As far as the Library was concerned it presented both a challenge as well as an opportunity.

In the beginning

CDU had already starting making moves in the right direction having set up the Institute of Advanced Studies (IAS) in 2004, with the main aim of extending research activities to "to maximise the benefit to both the region and the wider academic community" (CDU, 2005). In establishing the Institute, it was envisaged that the University would become the regional leader in research on issues related to Indigenous Australia, and the unique environment and ecology of the wet tropical north and the dry arid centre (CDU, 2005).

At about the same time the Federal Government's Research Quality Framework (RQF) – an exercise to measure the quality and impact of research being carried out in Australia – was in the process of being set up and at the end of 2006, funding was made available to universities for the implementation of the RQF. A year

later with a change in government the RQF evolved into the Excellence for Research in Australia (ERA) initiative, a new method of assessing research quality using metrics and expert review (Carr, 2008).

Ultimately university incomes as well as their academic reputations were to become reliant on the productivity of their researchers. The focus in universities therefore, even more than before, was on increasing the quality and quantity of publications. Parker (2012) described this as being a "surrogate metric for Australian universities' research intensity". It became imperative for the Library to make a concentrated effort to work with the various research groups of the University – the research office, research committees and other similar groups as part of the response to provide increased support.

While the Library had long realised the necessity to provide high quality information services to its research staff and students, it was the national trends that provided the catalyst for the Library to rise to the challenge and create new roles to better provide research support (Mamtora, 2011).

A new role was born

In Australia, there were few library staff dedicated to academic research support at this time. In 2004, Houghton, Steele and Henty had written about the increasing need for improved access to research information and scholarly communication, but without venturing into the new and challenging role that was to be required of librarians in coming years. Genoni, Merrick and Willson called on librarians to embrace "research literacy" and start to work more closely with the scholarly community (2006, p. 744).

CDU Library was not able to immediately hire new and specialised staff to provide this new extended service, as was the case at some larger universities (Borchert and Callan, 2011). In the interim, the team of liaison librarians continued to work with the full range of clients – staff, researchers, and higher education as well as vocational education students.

In 2005, a submission for a new dedicated position to support research was made to the University's new initiatives' fund; but proved unsuccessful. The Library continued its quest to source funding while making use of existing staff and facilities to fill the emerging gap. It was not until more than a year later that an opportunity arose as a result of an internal restructure to create the new position. The appointee, known as the Research Services Coordinator (RSC), was a professional librarian with a research degree, extensive experience in the liaison area as well as leadership skills, and good communications and marketing skills. She had also recently completed a postgraduate teaching qualification. The new role was predominantly still that of a liaison librarian (Parker 2012) except that the liaison was to be carried out with a specialised group of clientele – the research community of the University. In the case of CDU, the terms "researcher" or "research community" refer to all staff of the University's research schools and institutes whether they be professorial staff, research fellows or research assistants; as well as all higher degree research students. More recently a change in enterprise bargaining (employment contract) conditions has meant that all academic teaching staff are required to spend a substantial proportion of their time carrying out research so that the needs of this group are equally met. This necessarily implies that "librarians involved in research liaison require a broad overview of researcher needs across disciplines and the scope to design new services for researchers based on the changing landscape" (Parker, 2012).

Herein lay the challenge. From the outset it was envisaged that in this role the RSC would work closely not only with the existing team of liaison librarians, but also with the Office of Research and Innovation and all other areas of the University providing research support.

Needs of researchers

Researchers today need a number of skills to be successful in their endeavours. Firstly if they are starting out as new researchers, they need to ensure they have the basic but all too important skills of being information literate, of being able to identify the information they need in order to carry out their research. They need to know where and how to find the information, and once they have found it, to be able to synthesise and analyse it and apply it to their needs. In so doing researchers will first need to determine the type of resources they will access. Will they start off by using a web discovery tool to search across a number of resources, or will they just focus on using online journal databases? Are they familiar enough with using the tools efficiently and in a timesaving manner? Do they know how to develop and refine search strategies, and set up alerts and RSS feeds? If the answer to any of these questions is no, then this is where librarians will be available to assist. Researchers

will be able to attend library training workshops on searching for information, on setting up alerts or tracking research. In addition they will also be able to book a one-on-one consultation with a librarian, tailored to their specific needs.

If they are in the category of being Early Career Researchers (ECRs) or Higher Degree Students (HDR), they will also need to start actively publishing in their field of research. With so many journals in circulation, both in Australia and worldwide, how will they know which journals to start with? Will they target high impact journals or will publication in any scholarly, peer-reviewed journal in their discipline area be adequate? Once again librarians will play a role in introducing the range of tools available to them and selecting the ones most appropriate to their specific needs.

In the Library Research Support Survey (CDU, 2012) carried out at Charles Darwin University in November 2011, all respondents were asked to classify themselves within one of the following four categories: new researchers; early career researchers; established researchers; and "other". Of the total number of respondents to this question, 40 or 28 % classified themselves as being new researchers; 29 % of respondents (42) considered themselves ECRs; and 35 or 24 % established researchers. A further fifteen respondents ticked the "other" category and this included mid-career researchers, academic staff and research administration staff. More than 60 % of new researchers said that they needed help with the following: keeping up with their research topic; setting up alerts in databases; finding journals and uploading their research outputs into CDU eSpace, the University's institutional repository. 76.5% of ECRs said they needed to further develop their skills in keeping up with their research topic. 46.4 % needed to develop their skills in finding journals to publish in as well as finding open access journals. Of the established researchers, 61 % also needed help with keeping up with their research topic, while 46.4 % needed to improve their skills in finding journals to publish in as well as identify open access journals. 50 % of the "other" category needed help with using referencing software, with 41.7 % needing help with developing effective search strategies, and 41.7 % also needing help with filtering search results. In summarising, no matter the stage of a career a researcher is at, help and assistance is needed; but the nature of that help and assistance can vary.

In a comprehensive report, recently produced by Research Libraries UK, Auckland (2012) surveyed the information seeking behaviour and information needs of researchers in 23 research-intensive university libraries in three regions of the world – Europe, North America and the Asia-Pacific. The RLUK findings indicate that researchers have varied needs depending both on their discipline as well as stage of their research career; that researchers in the sciences are more likely to use Twitter and digital repositories while those in the social sciences will be less likely to use Twitter and other emerging technologies (Connaway and Dickey, 2008 cited in Auckland, 2012).

Skills required by librarians

With support from their management, research librarians therefore themselves need to rise to the challenge and try and understand, and address, the disparate information needs of their respective research communities. As mentioned earlier, the role of the research librarian as it is generally known, is relatively new in Australia, and it is continuing to metamorphose. The University of Sydney is quoted in the RLUK report as saying, "Librarian roles are constantly evolving as the client demands evolve, so we evaluate and create new services to better support these demands (Auckland, 2012).

Nevertheless the research librarian will need to have a series of core skills in the area of communication, training and evaluation. Being able to communicate with the range of researchers whether they are professors, senior research staff or PhD students will be a crucial skill to have. They will need to be able to address forums; have good writing skills as well as listening skills to fully comprehend the needs of their clientele. Another key skill is that of information literacy training and helping build capacity, either on an individual basis or by delivering workshops. A formal teaching qualification would be of enormous benefit. Evaluation skills would help to first assess the impact and quality of support being provided, and to review and improve upon it. The use of new technologies to create online workshops to supplement the face-to-face training will also be important.

The primary role of the librarian to provide support remains unchanged; what is changing is the way in which it is delivered (Bains quoted in Anyangwe, 2012). Librarians need to familiarise themselves with the various stages of the research life cycle, and the range of activities that researchers are engaged with, so that they can play the new and vital supporting role. Whilst research librarians will work with subject or liaison librarians for the provision of discipline-specific support and will be "discipline agnostic", they will need to be aware of disciplinary differences as far as research practice goes (Parker, 2012). They will also play a part in developing the collection in key research priority areas. In addition to generic training sessions on searching journal databases and using referencing software, they will embrace the range of new roles including supporting

researchers with literature reviews, with identifying journals in which to publish, with tracking research impact, and with grant applications (Parker, 2012; Auckland, 2012).

Increasingly librarians need to "become effective marketeers" (Bains quoted in Anyangwe, 2012), to successfully relay the advanced level of support now available to them. In a sea of choice, librarians have to become islands worth visiting. Another potential area of support is in the use of social networking tools for online collaboration. James et al (2009 cited in Auckland, 2012) particularly recommend the use of social media for research collaboration purposes, but found that 72 % of ECRs were not aware of some of the tools that were available to them. Given that social media is a fast-moving area, the library will keep track of any new developments, and bring those that are relevant and appropriate to the attention of the researcher.

The 2011 Survey (CDU 2012) also investigated the knowledge and use of a number of social media tools by CDU researchers. With particular reference to the social media tool, Twitter, 55.3 % or 26 researchers claimed to have knowledge of what it was; however none were using it for research purposes. Although 48.9 % (23) said that other tools such as YouTube or LinkedIn contributed to their research process, on further investigation it became apparent that only 32 % (15) were actually using one or more tools for research purposes. On being asked if they would like to learn how to use them if they weren't already doing so, just 10 or 34 % indicated that they would be interested now or in the future. The benefits of research collaboration using this range of Web 2.0 tools is an area that needs further investigation at CDU as well as better promotion of the usefulness of these tools for research endeavours. A workshop is planned for the second half of this year.

Skills gap versus CDU

A study carried out by Clyde (2005) reported on the increasing need for librarians in the workplace to acquire skills in information literacy instruction. She carried out a content analysis of 150 job advertisements in IFLA's LIBJOBS between December 2001 and February 2002, and found that more than 50 % required some form of training or education component, with 65 % of them in university or college libraries. Similarly the position profile of the RSC specifies running of workshops for researchers. This then has implications for the Continuing Professional Education of librarians. IFLA has shown support by compiling information literacy guidelines, as have academic library organisations in the UK and Australia.

The RLUK study (Auckland 2012) also carried out a survey of librarians' skills in 22 UK libraries in mid-2010. Nine skills in particular were identified as being critical at that time, and for 2–5 years following:

- Excellent knowledge of **bibliographic and other finding tools** in the discipline/subject
- Excellent skills to **design information literacy training** (both face to face and online) to meet the identified needs of different types of researchers
- Outstanding skills in **information discovery**, literature searching etc.
- Knowledge to advise on **citing and referencing, and the use of bibliographic management software**
- Ability to pro-actively **advise on and market appropriate library services** to researchers
- Good knowledge of **data sources** available in the discipline/subject
- Excellent knowledge of **content** available in the discipline/subject
- Awareness of current and changing **local research interests**
- Ability to gain an appreciation of **individual researcher/project needs**, including effective listening skills

Of these skills, it can be comfortably said that the research librarian at CDU possesses all of these skills to a greater or lesser extent; with the liaison librarians having skills in at least half of them. How these skills have been acquired is discussed in the next section.

The study also drew data both from an international survey as well as the UK one to come up with a list of nine key areas where a skills gap appears to exist (Auckland 2012, p.43):

- Ability to advise on **preserving research outputs** (49% essential in 2–5 years; 10% now)
- Knowledge to advise on **data management and curation**, including ingest, discovery, access, dissemination, preservation, and portability (48% essential in 2–5 years; 16% now)
- Knowledge to support researchers in **complying with the various mandates of funders**, including open access requirements (40% essential in 2–5 years; 16% now)
- Knowledge to advise on potential **data manipulation tools** used in the discipline/ subject (34% essential in 2–5 years; 7% now)

- Knowledge to advise on **data mining** (33% essential in 2–5 years; 3% now)
- Knowledge to advocate, and advise on, the use of **metadata** (29% essential in 2–5 years; 10% now)
- Ability to advise on the **preservation of project records** e.g. correspondence (24% essential in 2–5 years; 3% now)
- Knowledge of **sources of research funding** to assist researchers to identify potential funders (21% essential in 2–5 years; 8% now)
- Skills to develop **metadata schema, and advise on discipline/subject standards and practices**, for individual research projects (16% essential in 2–5 years; 2% now)

At CDU Library, the work of data preservation and management is currently being carried out by the Digital Collections Coordinator (DCC), who has responsibility for the University's institutional repository, CDU eSpace. With support from the CAUL (Council of Australian University Librarians) Australasian Institutional Repository Support Service (CAIRSS), many of the above activities are being addressed, or are in the early stages of being implemented. It is planned that in the near future, the RSC will work closely with the DCC in providing support, in promoting services and getting the message across to the academic research community with which close links have already been established.

While many university libraries both in Australia and the UK have taken on the role of research data management, Auckland found little evidence of liaison or subject librarians specifically taking on this role (2012). It is envisaged that in the long term, the CDU liaison librarians will also become involved in providing support in this area. Garritano and Carlson (2009) suggest that the base knowledge that a liaison librarian possesses can also prove useful for specialised research roles such as those of data management and data curation. Traditional library skills in doing reference work, collection development and information management can all contribute to the undertaking this new role.

Formal and informal methods of professional development

Over a period of time a series of formal and informal methods of professional development have been devised in order for the RSC to gain and improve knowledge in new areas. Undoubtedly additional skills will continue to be required in order to provide a tailored service based on user needs.

The first step for the new RSC at CDU was to identify the community and their needs, while at the same time raise awareness of the new support service available. The needs of researchers at a small university can inevitably be quite different to the needs of those at large, well-funded universities. At the time CDU Library had a small resources budget that had not increased in many years, so the challenge was to find workarounds that weren't predicated on substantial resources.

Initially, introductory appointments were made with heads of schools or institutes, and key research office staff; presentations on Library research services available were made at school meetings, faculty research committees and to various other research teams. This process contributed to familiarity with the job, promotion of services and an understanding of the specialised needs of the research community. Websites of other universities were scoured to assess the type of services being provided by other research institutions in Australia and overseas. Furthermore a collection of readings was gathered to garner knowledge about the various aspects of research support that could be provided.

In addition to these informal, ad hoc ways of gaining knowledge, formal avenues were also pursued as much as possible. As well as learning by communicating with colleagues working in research areas, a number of vendor training sessions were organised primarily for library staff and which were also opened out to researchers. Learning how to use the increasing number of specialist tools such as the Web of Science citation indexes; Journal Citation Reports; the Scopus database; ScienceDirect Freedom Collection; the Australian Digital Theses database; and the ProQuest Dissertations and Theses Database to name a few, proved invaluable.

Support has been available through the QULOC (Queensland University Libraries Office of Cooperation) Research Support Working Party to its member institutions. Although CDU is not based in the state of Queensland, membership is extended to interested institutions beyond its immediate region. This is a valuable partnership where, through the various working parties, member institutions share resources and advice, and smaller university libraries such as that of CDU benefit enormously. Meetings are held bimonthly face-to-face for those that can make it, and by video/teleconference for the rest. Workshops and forums are organised based on need and staff of member institutions are charged a fee for attendance. A wiki is used to share resources including institutional reports and minutes of meetings.

One QULOC member, the Library of the Queensland University of Technology (QUT), recognised the need to fill their skills gap and in partnership with other areas of the University, developed a formal program of research support skills for its staff "as library staff need to acquire new knowledge and skills themselves in order to be able to support researchers and help build university capability" (Borchert and Callan, 2011). The program, first implemented in 2009 and 2010, included a series of workshops and seminars on topics ranging

from research data management, intellectual property issues, liaison for research, bibliometrics, research grant cycle, and many others. It presented a valuable opportunity for staff to upskill and meet the changing needs of their researchers.

In comparison, CDU is a much smaller university with just five liaison librarians working with the RSC in providing research support. It has therefore just not been possible to formulate a tailored training program for Library staff such as that of QUT.

In a research project on the pattern of staff development activity in Australian university and research libraries, Ian Smith (2002) reported on the commitment in universities to staff development despite the "pressure of contracting budgets". Furthermore, he highlighted the "increasing role of librarians in teaching information literacy and knowledge management". Duncan Smith (2001) had earlier identified Continuing Professional Education as the key to "provide practitioners with current information, knowledge and skills, increase their performance in their present positions and prepare them for new challenges and responsibilities in the future". Being based in the remote and regional capital city of Darwin has meant that distances, and therefore costs, to access these continuing professional development activities interstate are always considerable. This is understood to be the norm, and generally managers accept the inevitability of this and agree to provide support as much as is possible in spite of limited budgets.

Opportunities for the RSC to attend conferences, workshops or seminars continue to be taken up with great enthusiasm whenever the opportunity arises. Such gatherings are invaluable not only in terms of learning from papers presented but also the tangible benefits of networking with colleagues from other institutions and visiting local libraries and seeing how others are providing support. Attending workshops on bibliometrics for example, has played a notable part in supporting researchers involved in the ERA exercise, and providing support with applications for research grants.

RSC and liaison librarians

While the RSC focuses specifically on supporting the CDU research community, the small group of liaison librarians continue to work with the full range of students and staff at the University. They contribute to running some of the extended workshops such as the half day Advanced Information Skills Workshop, and take the opportunity to meet staff and students from their respective schools. Generally the RSC is the first point of contact for researchers, and offers research inductions and consultations in specialist areas, and organises the program of workshops. The liaison librarians provide subject-specific support and act as a backup for the RSC when required. Similarly, the RSC does the same for liaison librarians when required.

The liaison librarians participate in the research workshops as part of their upskilling process, and equally take advantage of one-on-one support from the RSC, as well as the online workshops which are created predominantly for external and off campus researchers. When required, the RSC runs workshops for library staff whether they are interlibrary loan staff, liaison librarians or service desk staff.

Personal PD planning

CDU. At CDU, all staff are required to complete the annual professional development planning exercise (CDU, 2012). The plan allows individuals to define their personal goals and align them with the goals and priorities of the University. It further allows the opportunity to identify training and development needs in order to be able to better carry out the tasks and duties against each of their personal goals. Many of the PD activities outlined in the above section have been defined and completed through this activity. A review of the plan towards the end of the year helps the individual staff member and supervisor, ensure they are on track, and if not identify why not.

ALIA. The professional association for members of the library and information community in Australia is called ALIA, the Australian Library and Information Association. ALIA membership entitles participation in the ALIA PD Scheme (ALIA, 2012). It is not a mandatory scheme but it is points-based and allows the member keep track of their PD activities over a 12-month period. An online database allows the recording of the details of each activity completed, number of points gained and the learning outcomes. Once the member has participated in the scheme for 12 months and collected a minimum of 30 points, they are eligible to use the Certified Practitioner post-nominal (CP) after their name. After three years of participation they can apply for a CP certificate in

recognition of that achievement. It demonstrates the commitment to professional development and proves particularly useful for job applications.

Both these PD programs contribute to help keeping track of any professional development activities that are required to better carry out one's duties. They also serve as a reminder that the PD program needs to be balanced and that acquiring skills in other areas of emerging interest is equally valuable.

Current support to researchers

Gradually, in tandem with the new skills and knowledge gained by the RSC, the number of services offered to the CDU research community has been increased, based on needs and specific requests from staff and supervisors. Specifically, a series of tailored on-campus workshops was developed and supported by a suite of technological tools. As well, a research consultancy service was developed for individual support. New researchers or those new to CDU and its range of services, are offered a research induction opportunity – a one-on-one-session where they are introduced to the range of online and print resources available to them through the Library. Particular attention is given to the needs of international students who may not previously have been exposed to the type or range of resources available to them at their new institution, nor to the particular research-learning culture in Australia.

Workshops and consultations are run at the Casuarina Campus (in Darwin) as well as at the Alice Springs Campus and occasionally overseas, in Indonesia. Notwithstanding face-to-face support being provided to researchers and research students and increasingly at the suggestion of research supervisors and research program leaders, the use of email and telephone have also proved to be critical communication media. As well, the Collaborate online classroom environment and Skype technology are starting to play a role in the slowly increasing support being provided to external research students and staff as well as those based at other campuses or centres.

The workshop program is supplemented by a range of online tools: podcasts using Adobe Audition software on topics such as *Journal Impact Factors* and *EndNote*; subject guides on Research Support, Research Methods and the Literature Review; online tutorials on topics such as *Finding Theses* or *Setting up Alerts* using software such as Captivate, Camtasia, Screenflow and Adobe Presenter; and *MyResearch*, a web site for research students which guides them through the research process. Sometimes learning how to use the particular software program was a voyage of self-discovery; at other times it was a matter of collaborating with colleagues in the Library or in the Web and Multimedia team of the University to learn how to use it.

The aim of both the group and individual support was predominantly to help the researcher become more information literate, and in this way to work more independently and thus achieve success in his or her research endeavours. In rising to meet this challenge library staff themselves have to ensure they continue to upgrade their own skills and competencies.

Evaluation exercises

In the last five years, a number of evaluation exercises have been carried out to assess impact and identify any gaps that exist in the support that is available. The Library regularly carries out biennial client satisfaction surveys of its client group; however it was apparent that there was a need to carry out targeted evaluation of the research community to further provide direction in an area that is of vital importance to the University and its standing nationally.

Online surveys of researchers have been held in 2008/9 and 2011/12 using SurveyMonkey. Focus group discussions followed these surveys to provide an additional opportunity to identify strengths and weaknesses of the support provided, and unmet needs. All workshop participants are given the opportunity to give feedback by completing an evaluation form. The results from this series of evaluations have been, and continue to be, used to improve the products and services on offer to the research community.

Despite continuing challenges and budgetary constraints faced by the Library, it is evident that the University is doing well in terms of research quality and output. The results of the recent ERA 2010 exercise saw the University's research strengths in the areas of Environmental Science and Management, Zoology, Agricultural and Veterinary Sciences, Clinical Sciences, and Medical Microbiology, all receive performance rankings above both the Australian as well as world average (CDU, 2011a). From 2005 to 2010 CDU's external research income doubled to \$32.8 million and more recently, the 2010 SCImago Institutions World Report ranked CDU at the top among Australian universities in terms of research performance (CDU, 2011b). Furthermore, an international survey ranked CDU fourth in Australia and 123rd worldwide for environmental and ecology research based on research quality (Top institutions in Australia and New Zealand for research in environmental sciences and ecology, 26 May 2011).

Survey results and CPD

In attempting to address the concerns raised by researchers in the surveys, naturally there are implications for further professional development activities. As previously reported, the information literacy needs of researchers

and the particular CPD needs of the librarian continue to be addressed. Evaluation forms from workshops provide continual feedback, and the survey results have provided further input. Many of the CPD activities undertaken as a result of the 2008-2009 evaluation are reported on in the PD section above. The results of the more recent survey indicate that overall, researchers are satisfied with the range of workshops and support available. However there are a few implications for professional development, predominantly in the area of providing training in different types of referencing software and the use of social media for collaboration. These will be highlighted in the annual PD plan of the RSC and earmarked for action in 2012.

The results of the various evaluation exercises will continue to feed into the Library's staff development program for 2012-2013. Contrary to the findings of the UK study into academic research support (RIN, 2010), the findings clearly indicate that it is well worthwhile investing in CPD activities in order to be able to respond to the needs of researchers. These activities will then be incorporated into the PD plan of the individual staff member.

The evaluation exercises are critical in ensuring successful and targeted delivery of services to the community. The 2011 survey identified areas of need that have implications for further continuing professional development.

Conclusion

At CDU, a concerted effort is being made to marry the needs of the user community with the skills and attributes of library staff. The research arena is in a state of flux and will continue to be so for years to come; librarians will need to be able to keep up with and more precisely comprehend the needs of their research communities. In order to be able to respond more effectively, in turn they will ensure their skill levels are updated accordingly. Monitoring and evaluation of services will need to be undertaken continually to keep up with the changing needs.

It is conceivable that the efforts of the Library in providing support to the research community have contributed towards the impact and quality of the research being carried out at CDU. The evaluative exercises have proved useful and have presented opportunities to improve the products and services offered by the Library. As a consequence, CPD needs and objectives are measured in the context of how these products and services will be designed, delivered and evaluated. For CDU, the surveys have shown that there is a direct link between the relevance and usefulness of the Library's research support services. Therefore there has to be value in ensuring that the Library staff have the skills, competencies and confidence necessary to undertake this work.

It is intended that the research community will continue to be surveyed on a regular basis in order to respond to new or changing needs, ameliorate any problems and identify new opportunities. Scholarly communication trends will continue to change and academic and research priorities shift as a result. Regular communication with researchers and continuous assessment of their needs will help the Library keep track of changes happening in the research landscape both nationally and globally, and play a critical role in the success of their endeavours.

In response, librarians will need to upgrade from liaising with researchers to collaborating with them (Auckland, 2012; Potter quoted in Anyangwe, 2012). The research librarian's role is itself in a state of continual transition, and is changing from a supportive relationship to a collaborative partnership, from one that is on the periphery to being embedded within the research community.

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