Embedded Librarians – The Missing Link between Researchers and Their Library?

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Abstract
The high publication output generated by research projects means these often have lighthouse status for the organizations involved. As part of a team of researchers embedded librarians assume responsibility for a variety of tasks such as gathering and processing information as well as supporting and preparing material for publication. This process demands that they possess, among others, the skill to act as members of an extended library team and as „power-users“. Since researchers use the library almost exclusively virtually, embedded librarians get to know researchers’ information needs at the point where they originate. Therefore, they can act as initiators for extended library services and as trailblazers for new areas of activity. This will affect many aspects of the ordinary librarian’s work such as collection development, inter-library loan or issues to do with licensing. This article is about the potential and added benefits that embedded librarians can offer particularly to the libraries of university clinics.

Key words: Library Services/organization & administration; Library Services/utilization; Librarians; Professional Role; Interinstitutional Relations

Introduction
In our day, where biomedical information is nearly ubiquitously available, health science libraries are having to prove their relevance and value for their home institutions. It is fact that library users come to the library building rather infrequently for traditional services. One solution for libraries is to become less centralized by embedding librarians in the context of medical education, research and patient care. There are some examples of libraries reported on in literature which have successfully developed decentralized services. Emerging job titles such as „embedded librarian“, „clinical librarian“, „informationist“, „liaison librarian“, and „research librarian“ illustrate the attempt to meet that demand.

On the other hand, it is currently becoming more common for the cooperation with librarians to be initiated by user groups themselves which goes to show that the value of the librarian’s expertise in special contexts is still in demand and being appreciated. Especially research teams are looking for information professionals who become team members with different roles inside the research process. The literature offers many examples where „librarians and library services are being written into grants“ (1).

That was exactly the situation at the University Medical Center Hamburg-Eppendorf (UKE): In 2013 an embedded librarian was employed in a health care research project – without the collaboration of the central medical library. Although the library was not involved, it was a good opportunity to learn more about the demands and the skills needed to perform in a research environment. So after an invitation to come to the library our formerly invisible new colleague gave an interview about her recent experience in the new workplace.

Tasks and requirements
‘Our’ embedded librarian works part time in a grant-funded project of the institute. Her workplace is located at the institution exclusively and financed by subsidies. She regularly attends group meetings and is fully accepted as a team member. However, some of her tasks as information professional are
performed remotely in her home office.

The services provided are:

- Topical research;
- Evaluating and summarizing literature;
- Ready reference;
- Content management (inter- and intranet);
- Citation validation in the pre-publication process;
- Preparing publication lists for different purposes (e.g. evaluation of the research output for further subsidies).

In addition, our librarian works as an intermediary between her user group and the central medical library. She regularly uses the library services for document delivery and makes recommendations for acquisitions. To adjust to the health science environment, she has attended the library's special trainings on database research and reference management. Thus, she does not replace centralized services, but ensures that the user group obtains the information needed in an efficient way.

These activities correspond with several examples described in the literature. The research project about models of embedded librarianship funded by the Special Libraries Association (SLA) is a good source of further examples of activities. Table 1 shows identified services and their relevance.

Table 1: Services Performed by Embedded Respondents by decreasing percentage (2)

The result shows a core set of activities. However, the list shown above does not claim to be exhaustive because there are different demands depending on the user group. Some activities do not differ from those of colleagues in the library building. However, the authors state that “the distinguishing factors for embedded librarians are ultimately their relationships with their customer groups” (2).

In addition to the tasks described by 'our' embedded librarian and the study of the ASL, the literature mentions several examples of the provision of specialized services. In their model of embedded librarianship for health science librarians, Wu and Mi (3) propose a variety of activities and desirable skills at different levels of embeddedness. At the highest level, the authors include the development and maintenance of a collaborative workspace for research projects, co-authorship and collaborating in
the writing of applications for grants and conducting research projects. The authors point out that „the implementation and practice of embedded librarianship requires librarian job redesign, which […] requires effort and investment from both individual librarians and library administration“ (3). But what do researchers expect? And what do librarians think are the expectations on the part of researchers? According to a study commissioned by the Research Information Network and the Consortium of Research Libraries researchers and librarians agree “in not seeing core roles for librarians as […] subject-based experts embedded in departments or research groups” (4). Maybe this reflects a preconception on the part of most researchers and librarians who cannot envision the benefits of an embedded librarianship model. One comment in the librarians’ focus group for this study was: “It’s hard to serve researchers properly because it’s almost impossible to find out what they want”. Another maintained that “the research community tends to ‘do things by itself’” (4). The last statement is similar to a finding in another study conducted on the information needs in a biomedical research setting. Researchers are “self-sufficient users of information”, and the authors conclude that “If librarians, not just library resources, are to have a place in their workflow, it must be in the users’ context” (5).

Definition
After this 'job profile analysis' it is high time for a definition. As mentioned earlier, even in the single field of health sciences there are a number of different roles for embedded librarianship. For our approach – developing decentralized services for researchers – it is the definition of Greyson, Surette, Dennett and Chatterley that fits best:
“A research-embedded health librarian: participates in a research team(s) rather than focusing on traditional library management and services and provides tailored, intensive information services to a health research team with which she or he is integrated” (6).
This working definition, which is based on a survey among Canadian health librarians, distinguishes the “REHL” from the traditional librarian and also from a professional who additionally has a sophisticated understanding of the clinical environment – initially called informationist and later sometimes information specialist in context (7).
In our case it is no option to embed a librarian in clinical teams because of the lack of expert knowledge especially about clinical subjects. There is only one librarian with an education in health sciences in our library and due to his workload it is impossible to exclusively assign him to work for specific user groups.

Benefits
In times of decreasing reference questions it is important to prove the effectiveness of new services. In fact, “the literature specific to clinical and embedded librarians in academic medical libraries […] is not extensive enough to have merited a systematic review. However, clinical/embedded models of librarianship in academic health science libraries have been anecdotally reported as successful and beneficial to patrons” (8).
A commonly reported benefit is that users appreciate time savings and a better utilization of services. For instance, immediate access to articles is very important for scientists. „If the article cannot be supplied […] with a very few click-through steps, then the pursuit is abandoned. Scientists thus adopt a pragmatic approach: if the article cannot be read – or at least located and requested – within minutes, it remains unread … The result is information-deficit: researchers proceed with their work without having taken that information into account” (4). Many librarians reported an increase in requests after they had adopted the embedded model. However, the value of a more comprehensive information assessment is not being questioned, but can hardly be measured.
Furthermore, a better understanding of users’ needs is advantageous for the library. How do scientists work and how do they share information? Science is in transition due to the digital age and it is crucial that librarians are part of it for the development of future services that really meet patron's needs.
Skills and expertise
The practice of embedded librarianship includes not only the highly developed skills of an information professional. Especially in the beginning of a collaboration, interpersonal and communication skills are extremely important to form relationships within the customer group. Prior education or experience about the subject domain is, of course, an advantage but not an excluding factor if missing (2, 6, 8). Nonetheless, for a successful incorporation of the librarian into the research group it is essential to rapidly acquire domain knowledge on the job.

'Our' embedded librarian at the UKE, who has no experience in health sciences, emphasized the necessity to acquire domain knowledge through self-education, for instance about the clinical research process. The commitment to lifelong learning is a key competence which has to be accompanied by the ability and courage to reach out towards unfamiliar surroundings. Brady states that “this type of librarianship is not for the introvert” (8).

Towards a programme for embedded librarianship
Considering the background at the UKE and according to the literature it is very important to assess the conditions for the provision of decentralized services. These conditions include a readiness both at the level of the organization and of the librarian (7). If this readiness is low the initiative is very likely to fail which could set a bad precedent for future embedded librarianship initiatives.

Building relationships
Some authors describe the sometimes uneasy task of gaining the confidence of the customer group (6, 8, 9). It is therefore recommendable to start networking in fields that are commonly associated with the librarian's work. In the RIN/RLUK-study about researchers and their needs as regards research libraries, the respondents “agree that a key role for libraries in the future will be as custodians and managers of digital resources” (4). To stay relevant as a service provider it is a major task for the library to prominently advertise such strategic points in their home institution.

In our case the establishment of a Current Research Information System (CRIS) at the UKE with an associated document repository is a good opportunity for building relationships with the faculty administration and researchers. Validation of bibliographic records and metadata, database management, workflow design and import services are activities that do not have to be decentralized. The faculty and researchers highly appreciate it if the library assumes responsibility for documentation, particularly if further funds depend on this. Thereby, the library's expertise gains visibility and this could be a cornerstone for promoting other research-related specialized services.

Grant applications
As mentioned earlier there are examples of both library services written into grants and of embedded librarians involved in the grant proposal formulation (1). In conjunction with the faculty the library management has to find out how these liaisons could be formulated and best incorporated into grant proposals.

A report about the value of the services that libraries in the UK provide to researchers advocates that “Libraries have an opportunity to use their skills to help researchers improve the quality of their grant applications, and increase the institution’s success in winning research income” (10). The regular flow of high-quality grant applications is very important. The report suggests a more formalized involvement of the library in this process. This could ensure that researchers’ demands including staff, services and library resources are met. Therefore, liaising with the research support office is a major task for library management.

Recruitment
The more it gets common for research teams to employ librarians on their own initiative, the library's management could support them by providing services that cover the whole recruitment process. This can take the form of assistance in the development of clear job descriptions to improving productivity
and outcomes (3). The further procedure may include job postings, the drawing up of an assessment for applicants and consultancy during the selection process. Furthermore, attendance at the library ensures a good adjustment right from the beginning which includes getting familiar with the library's resources and services – and, last but not least, with colleagues in the library building. Additionally, this is a good opportunity for the library to build relationships with new colleagues that could outlast the project-based temporary employment of the embedded librarians. Because of the latters’ experience they have a potentially higher value for the home institution.

**Continuing education**

Library management has to provide a structure to assist individual librarians with their training efforts to develop new knowledge and expertise. Otherwise they are not able to seize opportunities. Subject librarians play an important role in the implementation of in-house training for reference librarians. The latter not only have to obtain deeper knowledge in all fields of information management, but also require basic knowledge about designated workspaces.

The development of an education programme is a very demanding task. Concepts like evidence based practice or scholarly publishing issues can partly be acquired through internal education. The education programme of the Library of the National Institute of Health (USA) is a successful example. It contains a core of three basic courses for their embedded librarians – called informationists. “These courses were ‘Introduction to the Principles and Practice of Clinical Research’, ‘Ethical and Regulatory Aspects of Clinical Research’ and ‘Understanding the Grants Process’” (11). Obviously, the trainings should involve intramural scholars and teachers. One advantage is that both groups – scholars and librarians – get in touch with each other which makes the courses a good opportunity for networking. Depending upon the work settings of their assigned or potential user groups, these in-house trainings have to be supplemented by appropriate education courses perhaps offered by professional medical library associations.

**Organizational considerations**

In general, embedded models rely on working conditions that are project-based and/or programmatic-based. If an embedded librarian exclusively works in one project he or she can identify specific research needs. By contrast, the programmatic-based embedded librarian, who is hired by the library on an ongoing basis, works within multiple projects (9, 11). The intensity of collaboration is determined by the nature of the librarian’s employment contract. Therefore research-related services were deployed at different levels and the library management has to pursue “an informal network strategy” (7) to coordinate the activities of central library staff, independent and programmatic-based embedded librarians. The challenge is to foster and balance these collaborations so as to ensure that services and knowledge are developed and distributed in the most effective way. There is a certain risk that some user expectations will not be fulfilled. During their continuing training reference librarians will gradually obtain the capabilities to work at remote locations, but in order to prevent disappointments defining a core set of services is helpful for both – users and librarians. Ideally the activities can be evaluated and expanded in a pilot project which may lay the ground for a wider promotion of decentralised services in the organization.

**Conclusion**

After taking the material to the user via licensing now the librarian follows. This can be seen as the most consistent development of libraries’ outreach activities. Embedded librarians have a great potential to collaborate successfully within research teams. While working as equal team members they get valuable insights into the research processes and the information needs of their particular user group. Therefore they have the potential of bridging the gap between researchers and library services. Several practical examples – and our experience can be included here – illustrate the value of this kind of incorporated support. Because of its complexity it is a challenging – but also an exciting – task to shape a plan for an embedded model. For some librarians this involves nothing less than a shift from
reference to research. To get there, continuous efforts over a long period of time are necessary. Relationship building, redefining librarians’ roles, provision of training, are all ambitious transactions. These activities can lead to highly customized services far beyond licensing online materials or one-shot instructions.

In our case – a university clinic with a high volume of research activities – it appears that the embedded librarian needs the information infrastructure provided by the central library to work efficiently. Some tasks and even new services had better remain centralized. In addition, multiple user groups require a somewhat gradual participation. Hence, the outline of our envisioned service model is a combination of centralized library services, serving multiple research projects, and networking with independent project-based librarians. Further practical experience as regards the collaboration with researchers is essential for an ongoing design and further development of complementary services.

References