

INTEGRATING LIBRARY INSTRUCTION INTO STUDENT EDUCATION

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1. Introduction

The present article is by no means a technical account regarding the formulation of library instructions. In this article we rather go into the phenomenon of library instruction within the context of student education. The views expressed here concern my personal observations regarding the library. More specifically, they regard the library's future as well as university education and its future in general.

In the first part of this article I shall concentrate on the question whether there is an actual need for library instructions, and if so, why there exists a necessity for library instruction as a separate activity.

Furthermore, I will briefly describe the consequences the technical developments entail for the library, as well as a number of future library trends that matter to the relation between the library and the process of student education.

On the basis of this analysis I will draw up several conclusions concerning the future of library instruction.

2. Library instructions as separate activity.

At the university, the university library has the task of providing scientific information for the benefit of education and research. The library selects, collects, preserves and provides access to information sources. Since this information functions as knowledge in the educational and scientific research process, it has to have a key role. To reach this objective, it is necessary that the information provision is adapted to the manner and situation in which it is used.

This, of course, implies that the library staff involved needs to be familiar with the user's requirements. Only then the library will be able to provide the information with extra value which is needed for applying it in both primary processes.

In the past the library has taken great pains to improve the application of its services in education and research. However, the instruments the library has created for this purpose comprise a large number of procedures and regulations. That is, rules the user needs to grow accustomed to if he wishes to find his way within the library. The following examples are intended to illustrate this fact.

The library contents are described in the catalogue that is organised alphabetically and according to subject. Presently, it has become possible to consult other library catalogues, either at your library or at your own desk or working place. You can even order documents from other libraries.

This is a step in the right direction, since it is a step towards the virtual library of the future, assuring us the availability of relevant information, irrespective of the place where this information is stored. Nevertheless, when considered from these new developments' perspective, the current character of the catalogue seems to be somewhat awkward.

Let us, for instance, have a look at the unified Dutch Library catalogue. Oddly enough, this register does not contain a complete overview of all the information published. When consulting this catalogue, the user can only access the combined inventories of a limited number of libraries, who have agreed to integrate their respective indexes. Thus, when living near the Belgian or German border, you can never be certain whether this catalogue gives you

information considering the contents of the nearest scientific library. To put it more strongly, it does not even provide information on the inventories of various scientific institutes not belonging to a university. Even more deplorable is the fact that this catalogue does not refer to available documents which have not (yet) been collected by the participating libraries. Fortunately, there is another way of finding out whether any material has been published about a certain topic. This is by referring to a bibliography, that is, if there exists one on the subject in question. However, bibliographies also have a reputation for not being very useful when it comes to indicating the exact location where the particular information or documents can be actually found. To this end, you need to turn to the catalogues once again.

The library also uses a system of subject headings, which originally were designed to provide some help when searching for information. Like categorising, subject heading amounts to arranging information according to certain categories, presupposing a more or less rigid system of categories. But in effect, there are no categories at all. There is only a continuous flow. Moreover, the conceptual scientific landscape is in constant motion as well. Of course, we must take into account certain differences between various disciplines. But we should also realise that the boundaries between them do not have a permanent character. Specialised subject librarians, having finished their curriculum several years ago and not actively participating in the research process, are no longer able to cope with the system itself, nor with its application.

There is another point of view from which the library's classification methods may seem to have a rational appearance, though in practice, they prove to be not quite as effective. The classification system can be useful if you have a specific question and you are looking for a specific answer. However, scientists do not just have simple questions. They usually deal with problems that only with the greatest of effort, can be translated into questions. The action nowadays referred to as browsing may be useful in that it helps them formulate new and fruitful ideas.

Naturally, I am not suggesting that all library activities involved should be cancelled, nor do I intend to say that they are useless. They are important activities which are valuable for our users. On the other hand, they are time-consuming too, both for the library and its users. Furthermore, they tend to be of a bureaucratic and procedural nature, qualities that even further limit their effectiveness.

From these trends we may conclude that it is the library itself that has introduced and self-imposed a number of rules and procedures which are far from being self-evident. As a matter of fact, the use of library facilities has become rather complicated to such an extent, that users need instructions in order to properly make use of its services. Worse even, these instructions necessitate the training of special instructors who are to coach the users. Basically, that is the reason why we have set up library instructions, since the use of the library cannot do without it. It is a situation - if I am allowed to say so - the library needs not be very proud of.

3. Technological developments - its implications for the library

Currently, libraries are finding themselves riding on the crescent of a second computerisation wave. The first wave took place during the seventies. This wave turned mainly manual back-room activities, such as acquiring, distribution and cataloguing, into computer-controlled activities. Commercial enterprises began marketing and selling products designed for computerising the library's distribution, cataloguing and acquisition systems. For the library's traditional customers, this implied that they had to fundamentally reorient themselves to the new way the bibliographic information was now becoming available, that is through an on-

line public access catalogue (OPAC). Additionally, libraries commenced building local bibliographic and indexing databases as well as several other databases.

Essential in the computerisation wave of the 90s is the deployment of computer networks (e.g. campus-wide networks at universities as well as national and international networks). These networks provide access to remote electronic information by means of library information systems. Another factor is at least equally important. Available electronic information is no longer limited to so-called secondary information (catalogues, bibliographic databases). Primary information has now become electronically available as well. Presently, we can refer to the electronic full-text versions of scientific journals. Electronic textbooks and readers enable us to consult information outside the library, i.e. at the professional and private work site of the library's traditional customer.

The manner in which the information technology has influenced the provision of information signifies a number of trends (McClure a.o., 1994).

1. The huge increase in digital information that has become available through the Internet. This rising flow of information is marked by its chaotic nature and by the fact that this flow comes into being outside the traditional information chain.
2. The growing number of commercial information services resulting in CD-ROMs and On-line Databases. These services are more or less prevented from developing any further due to financial troubles and copyright obstacles.
3. The influence exerted by trends in information technology on primary processes to which the library is ministering. This aspect has become quite apparent at universities where education as well as research is being (or will be) subjected to far-reaching changes resulting from the deployment of sophisticated technological tools, such as multimedia.

For the library, this has the following implications.

1. The physical collection is becoming less and less important.

This development is accompanied by a shifting focus of library service, moving from concentrating on supply towards centring on what is asked for by the customers. In correspondence with this trend, information reference is becoming more and more significant. The library acquires a gateway function. It refers to information, irrespective of the location where it is physically stored.

Growing emphasis will be put on navigation. By and large, users will prefer to find their own way across the large amount of available information. To an increasing extent, services will be provided from a distance: the users will choose to consult their sources sitting at their own desk, at their own computer. This, in turn, implies that the library needs to increase the accessible electronic collection. This can be achieved by disclosing sources elsewhere, and also by electronically providing material that has already been available on paper. Of course, this development will unavoidably be accompanied by new problems that are related to storing electronic information.

2. The distinction between various traditional tasks will fade.

Let me give a few examples. Basically, the library has been fulfilling the following traditional tasks:

- selecting information
- acquiring information
- preserving information
- managing information
- providing access to information.

Selecting a particular document is equal to confirming its relevance. Its proper registration can be considered as the document's organisation and belongs to the library's task of managing information. In effect, we are observing the fading of the borderline between the selection of knowledge and its organisation.

A second less obvious distinction is the vanishing difference between the acquisition of electronic document and providing access to the information contained in it. We need to strive towards a kind of meta-catalogue that no longer distinguishes between paper and electronic documents. A catalogue for which the location where the information is stored is no longer the most important aspect during searching.

As a result of these developments, the act of judging the relevance of various library tasks for primary processes has become more and more important. But who is to judge their significance? So far, this has been the task of subject librarians. However, their job has grown far more complicated than before. The amount of information is rapidly expanding. Furthermore, library customers - notably scientific researchers - are more and more developing themselves into specialists. Therefore, libraries are increasingly compelled to directly appeal to these scientists and their judgments. For this purpose, the libraries need to construct and maintain a contact network, which library staff can use as a base for helping scientist to organise the information retrieved for his benefit.

4. Two important future trends

In the next part we will be dealing with two significant future trends, which are of great importance to the connection between library innovation and student education (Savenije, 1997).

The first development is related to the information chain. The role of the library is often described in terms of a link in the so-called information chain. For readers who are not familiar with the jargon, the accepted definition of the information chain is as follows: 'An infrastructure consisting of a chain of groups who each fulfil one or more functions in the process of supplying information by using the available means.' This process stretches from the production of information to its consumption. Traditionally, the various stages have been strictly distinguished in terms of the chain's main functions, i.e. subsequently in the production, distribution, acquisition, and consumption of information.

At the moment, we can notice several problems connected with the information chain. Usually, the chain is represented graphically. This traditional representation used to be comparatively simple. Lately however, it has grown more complex due to the pressure of an ever expanding information stream and as a result of various technological developments. It is as if the chain is about to explode.

Even so, this metaphor of an exploding chain or cycle is not appropriate. The chain is not bursting at all. What is erupting, though, is the amount of information as a result of the way it has been transferred.

Yet, the functions within the traditional information chain, i.e. production, distribution, acquisition and knowledge consumption, could all be carried out at a so-called integrated work site. In this context, therefore, the use of a metaphor describing an imploding chain would be more suitable, since due to the pressure exerted by the environment, the system has started to shrink.

The configuration of functions within the information chain has become subjected to change, whilst within this changing constellation, all the parties involved are struggling to determine their own position. At the moment, for instance, both universities and publishers are instigating all sorts of arrangements between themselves on how they are to explore their new

roles in unison. There is considerable danger, however, that they will remain stuck within the traditional chain.

This danger becomes all the more obvious as soon as we attempt to describe the development of the information chain in terms of the so-called synergy model. This model, which we have borrowed from chemical theories on dissipative structures, is often applied to organisations and systems.

According to this model, the control of processes within an organisation remains stable until the configuration becomes agitated by a notable interior or exterior factor alien to the accepted pattern. In case these disturbances increase in number or extent, this leads to an unstable situation. In this situation, all sorts of events may occur which the ruling order will not allow for. Usually this state is characterised as chaos. Sooner or later, however, a new order will emerge out of this chaos, a constellation that is able to warrant renewed stability under altered circumstances.

On the other hand, should a new order fail to arise, the ensuing result will be regression, that is, a stagnating development and a more or less random disintegration of the existing structure.

In view of the developments in the field of information provision, this implies the necessity of innovative and creative experimenting with new roles instead of the adherence to traditional patterns. All forced attempts to preserve the old structure will not only impede development as such, but will also expose it to the increasing danger of its arbitrary disintegration.

A conclusion from this analysis, in our opinion, would be that the libraries should aim at becoming electronic document publishers, instead of merely relying on agreements with commercial publishers. Furthermore, this analysis suggests a new view regarding both functions of providing information for educational purposes and consuming information within the context of student education.

The second important development is related to the traditional way in which the library tasks have been considered to be some kind of overhead. This idea is due to become obsolete rapidly. In time, library tasks will be regarded as directly productive forces.

As a matter of fact, this trend proves to be connected with a development we have mentioned before. We must realise that it has become increasingly difficult to distinguish between the actual provision of information and the various processes in which this information is used. In the case of the university library, the primary university tasks are training and research. The fundamental aspect of training is the transfer of knowledge from teacher to student. The once clear distinction between knowledge transfer through teaching on the one hand, and the provision of information by the library on the other is fading as a result of the deployment of information technology in education. More and more, library services are blending with the teaching process.

A similar trend can be observed within the process of research. Here, the fundamental stages are the identification of sources, the exchange of information between colleagues, the interpretation and analysis of data, the dissemination of findings. In this case, the boundaries between information provision and the various stages in the research process are becoming faint as well.

Comparable tendencies have become apparent in other primary processes supported by library tasks, for example in policy-making and legal consultancy.

In general, we may establish that library functions are progressively integrating with the primary processes they are serving. This implies that the library tasks can no longer be

considered some sort of overhead services. On the contrary, they are developing into a directly productive force.

We would like to re-emphasize that, in order to properly determine the relevance of certain information amidst this vast available reservoir of data, it is imperative to acquire a thorough knowledge of the discipline in question.

As far as our subject is concerned, i.e. the relation between library tasks and student education, both developments suggest that it is going to be increasingly difficult to draw a clear-cut line between both functions, owing to the fact that technological innovations are pervading the library and the educational process. The function of the library is about to become an integral and indistinguishable part of the educational process.

5. Conclusion

As we have seen, the library has introduced a great many rules and procedures you need to familiarise yourself with if you want to make use of library services. If a scientist has a specific problem, these rules prove to be rather inconvenient for solving it. It seems, therefore, that generally the access to information has been rationalised in a one-sided, one-dimensional way only. We are convinced that this situation can be improved by means of information technology.

Surely, one could consider the application of this new technology as a mere continuation of the rationalisation process. Yet, this would be a one-sided observation. Soon it will become possible to link scientific intuition to technological achievements. Scientists and students will be able to browse through information as though they were strolling along bookshelves in a multidimensional fashion.

The future library's challenge is to bring its contents to life. We must create a library that is not merely a guide for receiving insight into the current way of organising information. The future library should also be helpful in establishing new methods of organisation. Search engines must not be designed to exclusively retrieve answers to specific questions. What matters is not what you search, rather what you want to create, i.e. the extra value that comes into being as soon as various information sources come together (Savenije, 1998).

Such a library can be represented in terms of a philosophical parallel. For instance, as the realisation of the ideal presented by Leibniz. The philosopher Leibniz commenced his career as a librarian and he strove towards creating an encyclopedia in which all knowledge was to be rationally gathered and interlinked. Referring to Leibniz's ideal, we could regard the library as an encyclopedia of the sciences, as an encyclopedia being endowed with a richly layered multidimensional order.

Modern information technology can and must be deployed to bring the library closer to scientists, teachers and students, in terms of both space and content. Thus, the number of rules and procedures, however rational they may seem to be, will be automatically reduced. Logistic automation has in effect created the large gap that exists between service and creativity.

We may see in this a parallel with Weber's 'Entzauberung' or disenchantment in English. This disenchantment of the library is caused by the manner in which we have decided to resolve the problems related to the violent explosion of information. A solution that in practice amounts to stacking information in such a way that it can be accessed by means of complicated logistic procedures only. This has inevitably led to a widening crevice between information and the individual's creativity and his values.

The original connection with man's creativity can be restored by introducing sophisticated search engines that carry information to the user's working place at dazzling speed. This

development suggests that using library services will become easier in the future, since these services are to be directly linked to the user's actual requirements.

In the preceding paragraphs we have been considering several notable library developments. Library tasks have been increasingly integrating with the university's primary activities. This implies that the provision of scientific information has become more incorporated into the education process. The boundaries between these activities, i.e. the information provided by the library and the knowledge transferred by the teachers, are fading and will eventually vanish.

Library instructions are undeniably useful. Yet, they have become indispensable since the use of library services has been made too intricate by the libraries themselves. In the past, the libraries may not have had an alternative. There is convincing evidence, however, that modern information technology is going to expedite their use. Computer interfaces are evolving into actually user-friendly tools, thereby enhancing the accessibility of information.

Re-enchantment of the library is going to change the search for information into an attractive, because fruitful activity, facilitating the process in which students learn how to access and use information in such a way, that they can make this activity an integral part of their educational programs.

Therefore, the ideal library instructor is not a person belonging to the library staff. It is a teacher who is responsible for the students' educational program in which the introduction of library instructions is an intrinsic constituent. If necessary, the teacher can of course rely on support by library personnel.

This target is already being aimed at several libraries. The actual impediment that complicates this aspiration is not so much a lack of willingness in library personnel, but rather the intricacies hampering the gateway to scientific information.

Seen from this perspective, the library's main task is to remove all obstacles preventing students and scientists from accessing the information they need. As I believe, it is those barriers that have made library instructions into a separate profession.

Literature.

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