



Predicting the Role of Library Bookshelves in 2025



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ABSTRACT

University libraries are questioning the added value of open shelves with books. As scientific publications are increasingly available in electronic format, which role do bookshelves have in the future library space? The Utrecht University Library case study invites librarians to fundamentally rethink how they could strengthen the function of open shelves in their library. Based on acquisition and user data, and on interviews with publishers and users, this article suggests that in 2025 bookshelves could play an important role in providing access to those publications which are preferred by users in paper format. However, bookshelves should no longer focus solely on paper publications, but on digital publications too, as most library collections increasingly become hybrid. Moreover, libraries should also think of ways to enhance the inspiring role of bookshelves. Then, the open shelves could have added value within the library space of the future, providing access to a hybrid collection and an inspiring place to study.

Introduction

University libraries find themselves in a transitional period. For decades, a large part of the library space was taken up by open shelves, providing information to students, scientists and scholars. But now, as information is becoming increasingly available in digital format, many question the added value of shelves in libraries. University libraries are slowly transforming into study environments, in which open shelves are replaced by a variety of other library services (Beard & Bawden, 2012; Beard & Dale, 2010; Kao & Chen, 2011; Montgomery, 2014; Paulus, 2011). Some technical universities have decided to become fully digital and now only focus on creating spaces for collaboration and online facilities (Cha & Kim, 2015; McAdams, 2011). Other academic libraries postulate that books on the open shelves can be moved to the depositories, having hardly any disadvantages for students and faculty staff as long as customers can quickly gain access to material they need for their study or research (Haapanen et al., 2015).

Does this mean that the days of the open shelves are over? In many libraries the public space is still heavily dominated by bookshelves (Smith, Kinash, & Brand, 2013). Often, libraries have large paper collections that are of interest to students and faculty staff (Keller, 2011; Massis, 2011). Moreover, research shows that books in the library are positively contributing to the learning experience of students. The physical presence of books stimulates students to become engaged with literature (Pennington, 2012; Wayne, 2015). In that sense, open shelves are not only a source of information but are also considered an essential part of the library atmosphere (Andrews, Wright, & Raskin, 2015).

But, how will these roles of the open shelves in the library evolve, during the so-called digital age? Remarkably few libraries have tried to thoroughly answer this question. To ensure that facilities within the public space of Utrecht University Library (UUL) continue to meet the needs of its future users, UUL has taken up the challenge to “predict” the future role of library bookshelves in academic libraries in, say, ten years from now. Based on trends in the composition and usage of the UUL open shelves, this article hopes to inspire librarians and others who think about the future of open shelves in libraries. In doing this, three stakeholders are identified: librarians, publishers and users. To a large extent these three stakeholders determine in which format publications are made available, how these publications are made available and, not in the last place, how these publications are being used.

Methods

This case study focuses on the open shelves in the two main library locations of UUL, called the University Library Uithof and the University Library City Centre. The library on the Uithof houses mainly, but not solely, publications for Geosciences, Medicine, Science, Social and Behavioral Sciences, and Veterinary Medicine. The open shelves in the University Library City Centre contain material for the Humanities and Law, Economics and Governance. As all disciplines have their own open shelves sections on these UUL locations, it is possible to compare trends in the usage of the collections within the various disciplines. In the process, three user groups were identified, namely Bachelor's students, Master's students and faculty staff. Moreover, the study was

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limited to publications published after 1900. And, as the UUL open shelves currently mainly contain books, because almost all scientific journals are available in electronic format, this study focuses primarily on books.

Acquisition data & interviews with publishers

To get a clear picture of the developments related to the open shelves, quantitative data on the period 2005–2016 were extracted from the registration systems of UUL.¹ These data show trends in the acquisition of paper and digital books and journals and the changing ratio between these formats. To explain these acquisition trends, the results were discussed with UUL faculty liaisons and subject librarians. This provided background information, for instance on sudden budget changes, on the moving of collections within UUL and on deciding the division between books on the open shelves and in the depositories.

To place these acquisition trends in a broader perspective, interviews were held with two suppliers and seven publishers.² The aim was to cover all (major) scientific disciplines and to get input from publishers both large and small, and from different countries. The focal point of the interviews was to identify what will influence the decision of future university libraries to buy books in paper or in electronic format. Respondents were asked what determined their choice to publish e-books and to share their ideas on the future of scientific publishing, especially related to books. Based on the input of publishers and suppliers it is possible to estimate in what format and under what conditions publications will be available in 2025.

User surveys & user group interviews

To see how acquisition trends relate to the usage of paper and digital publications within UUL, user data were gathered. Trends were identified on how often paper publications were borrowed, on average by students and faculty staff during the past years. Besides, data was available on how often publications in the open shelves were borrowed, in absolute numbers, but also in relation to the size of the open shelves. These data give a strong impression of how students and faculty staff of the various disciplines use the collections and the open shelves in particular. This was contrasted with trends in the usage of digital publications. However, in this respect results were limited by the fact that UUL is not able to make any distinction between user groups and disciplines when it comes to digital publications. Therefore, with respect to e-books and e-journal usage only general trends were identified.

To get a more accurate picture of the usage of the open shelves, in September 2015 a paper survey was distributed in both the libraries on De Uithof and in the city centre. The aim of this survey was to collect more quantitative data on issues where the UUL registration systems proved inadequate, such as on using material that is not for loan and the frequency by which visitors browse the shelves. Next the survey dealt with the background of the visitor, what activities visitors undertake during their library visit, and whether they use the open shelves, and if so, in what way. The questionnaire was distributed during several sessions by library staff and completed on bar tables at the entrance. To avoid bias, visitors were only allowed to fill in the survey once and the maximum number of completed questionnaires per session was set on 50.

Because it was expected that faculty staff does not visit UUL as much

¹ The data underlying the findings of this article are available at request by the author, with restrictions on those qualitative data which are privacy sensitive or confidential.

² Interviews were held with representatives of Erasmus Boekhandel, Yankee Book Pedlar, Boom, Brepols Publishers, Edward Elgar Publishing, Olms Verlag, Springer Nature, Uitgeverij Verloren and Wiley. To strengthen the internal validity of the interviews an instruction was written, which ensured that the interviews had a similar structure.

as students do, a supplementary online survey was distributed among scientists and scholars. Faculty liaisons and subject librarians were asked to send the online survey to their contacts. They had to ensure that the most important UUL user groups were represented in the response group. The data of both the paper and online survey were put together, and resulted in the following response group: a total of 831 respondents, consisting of 365 BA-students, 285 MA-students and 181 faculty staff.³

Faculty	BA-students	MA-students	Faculty staff	Total
Geosciences	33	56	30	119
Humanities	100	47	73	220
Law, Economics and Governance	78	50	15	143
Medicine	13	17	16	46
Science	31	45	18	94
Social and Behavioral Sciences	108	64	28	200
Veterinary Medicine	2	6	1	9

The results of the survey were discussed within four focus groups, in order to interpret the user data and try to seek possible explanations for the trends in the use of the open shelves. The focus groups consisted of students and faculty staff of disciplines sharing a common background: Social Sciences and Geosciences with 6 participants, Medicine, Science and Veterinary Medicine with 6 participants, Humanities with 7 participants and Law, Economics and Governance with 2 participants.

Results

Library' perspective

Like most other libraries, UUL provided students and faculty staff access to the latest and most frequently used paper publications via open shelves. For decades, visitors considered these shelves an essential part of the library and a very important source of information (Chrzastowski, 2015; Corlett-Rivera & Hackman, 2014; Dahl, 2013; Rowlands et al., 2007). Although looking for a place to study has always been an important reason to visit libraries too, in general, most students and faculty staff primarily came to the library to consult books. A large-scale survey of British university libraries in 2008 showed, for instance, that 87% of the students came to a library to borrow or read books while 54% came to study quietly (Nicholas et al., 2008). In UUL these percentages were probably largely the same, but times are changing.

Increasingly UUL acquired scientific publications in digital format and year by year purchased fewer paper books: in the period 2007–2016, the number of paper books UUL acquired was reduced by more than half. Since 2014 more than 90% of the UUL acquisition budget is spent on digital publications and databases. An important reason for this was the ambition of UUL to provide access to scientific information anywhere, anytime. Besides, as in most other academic libraries, it is seen as an advantage that searching for specific information in digital publications is easy and that there are options to enrich the text (Mincic-Obradovic, 2010; Moore, 2015). Moreover, in general, acquiring publications in a digital format is for libraries more efficient than buying the paper alternative. And last but not least, the digital format gives libraries the opportunity to make more new scientific publications available than ever before (Anderson, 2011; Ferris & Buck, 2014; Seger & Allen, 2015; Sharp & Thompson, 2010;

³ Visitors of UUL who were no BA-student, MA-students or faculty staff of one of the seven UU faculties were excluded from the response group.

Wells & Sallenbach, 2015).

However, for several reasons UUL still acquires thousands of paper books per year. Important is that, among others, the conditions of e-books are often disadvantageous compared to paper books. Often, e-books are relatively expensive⁴ (Ward, Freeman, & Nixon, 2015) and have usage restrictions (LaMagna, Hartman-Caverly, & Danowitz, 2015; Miller, 2015; Waugh, Donlin, & Braunstein, 2015). As a result, UUL regularly considered paper books a better option than the electronic versions. Moreover, many users explicitly requested a paper copy and, not in the last place, many titles were only available in paper format. That said, the number of paper books UUL acquired differed immensely per discipline (see Fig. 1). While for most disciplines only a small number of paper books were acquired, for Law, Economics and Governance by far the most part of the books acquisition budget was spent on paper works. And, most strikingly, of the 5.512 paper books UUL bought in 2016, 4.128 were acquired for Humanities students and faculty staff.

These acquisition trends have major consequences for the size and composition of the UUL open shelves. Overall, the total number of publications in the open shelves in the period 2005–2016 in UUL declined sharply. Increasingly, older publications which were less used were removed from the shelves, to the extent that since 2014 almost 80% of all the paper publications are placed in the depositories. However, also in this respect differences between disciplines are huge (see Fig. 2). During last years, more than 50% of all the publications in the UUL open shelves had a Humanities background.

How will those trends continue in the future? Based on the current acquisition trends it is likely that more e-books will be acquired yearly. And if the number of newly purchased paper books is reflected in the size of the open shelves, in most disciplines the number of open shelves will probably decrease. Besides, those shelves meant for the Humanities probably take up an even larger share of the total number of open shelves in UUL. However, the question is whether these trends can be extrapolated. In 2012, in a survey held at 32 English university libraries, librarians stated that they found themselves in a split, between user expectations about the availability of e-books and the actual number of titles that are available as an e-book. Opinions differed on how long it will take before the availability of e-books meets user expectations. Some university libraries expected a dramatic increase of e-books within their library, while others foresaw growing differences between disciplines (Vasileiou, Rowley, & Hartley, 2012). To see how future acquisition trends might look like, the perspective of publishers is crucial.

Publishers' perspective

E-books in university libraries are a rather new phenomenon and are still rapidly evolving (Mincic-Obradovic, 2010). Significant is that in 2009 United States university libraries spent only 6.6% of their books acquisition budget on e-books. In 2013 this increased to 18.8%. Also in 2013, revenues from books of American scientific publishers consisted of 7.6% from the sale of e-books, 40.8% of paperbacks and 50.9% of hardbacks (Ward et al., 2015). The fact that paper publications are still dominating book sales is strongly related to availability. Estimates on which part of the newly published book titles are currently available in e-book format differ a lot, but research shows that at least half of all new book titles is only available in paper format (Anderson & Pham, 2013; Link, 2012; Link, Tosaka, & Weng, 2012; Price & McDonald, 2008; Walters, 2013).

What explains the fact that many book titles are not available as e-books? According to most publishers “scale” is a very important factor. The bigger a publisher is the more likely it is that it publishes e-books.

⁴ In general, a single-user e-book has currently about the same price as a hardback and a multi-user e-book costs about 150% of the hardback price.

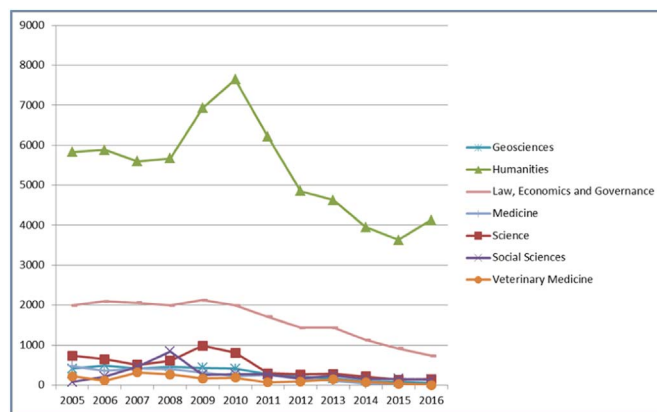


Fig. 1. Number of paper books acquired by UUL, per discipline (2005–2016).

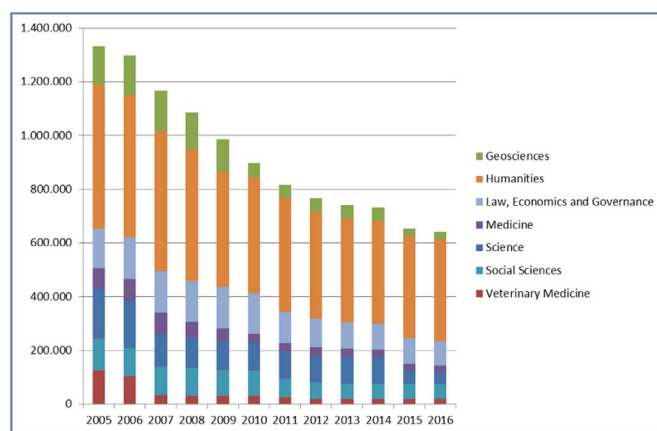


Fig. 2. Number of items in the open shelves of UUL, per discipline (2005–2016).

Likewise, e-books are more often available in larger linguistics areas and in larger scientific fields. The reason for this is that publishing e-books requires a substantial investment. Creating electronic texts and publishing them online may have become increasingly simple, but publishing e-books requires investing in expertise on standardization, formats and metadata, in addition to knowledge of (or even having one's own) platform(s). As scales increase it is easier to make these kind of investments.

Especially the circumstance that e-books are distributed via platforms is challenging for most publishers. Large publishers can afford to build their own platform, but most mid-size and smaller publishers depend on so-called aggregators, platforms of suppliers that allow publishers to make their e-books available. In return for their services, suppliers get a part of the (often limited) profit of publishers. Besides, publishers experience a lack of visibility when they publish via aggregators (Seger & Allen, 2015). Currently, many publishers don't publish e-books, or only a very restricted number, because they can't afford losing revenue and visibility.

In this respect, it is interesting that the scientific publication culture is becoming increasingly large scale. There is an amalgamation of publishers. Especially medium sized publishers are taken over by large scale publishers such as Reed-Elsevier, Wiley-Blackwell, Springer, Taylor & Francis and Sage. Simultaneously, the publication market is operating on a larger scale because the English language is becoming increasingly dominant. Apart from the fact that English is the lingua franca of science, scientific publishers often prefer publishing in English because it is more profitable. The result is a globalizing scientific book market in which the e-book is increasingly the standard format, not in the last place because within this market publishing e-books means saving immensely on distribution costs.

However, the publication culture in the Humanities shows a

different picture. Within this field there are many small, but important, publishers that publish books for a local market, often in non-English languages. Within these local markets it is less profitable to publish e-books, because of their scale, but also for several other reasons. For instance, in Romance language regions less aggregators are available, which makes it hard for small publishers to disseminate e-books. And, for example, in Germany there are concerns about user privacy, which make e-books less popular than paper books. But, besides these rather specific market circumstances, it is particularly important that for many Humanities publishers private customers are their main target group. While most science books are purchased by university libraries, a market that is highly digitally oriented, more than 90% of all the books bought by consumers are in paper format. As a result, for Humanities publishers which aim primarily at the private market publishing e-books is hardly worth the effort.

Besides scale and market preferences, an important consideration for publishers to publish e-books is the costs and quality of images. Copyright requires that publishers pay double when they decide to publish both a paper and an electronic version of a title. In certain disciplines, such as Art History, this is very problematic as publications often contain a lot of images. Moreover, publishers struggle with the fact that it is difficult to produce e-books with images of sufficient quality that are easily displayed on screens. *E-readers* are primarily designed for reading texts and often not good in displaying (color) images. Computer screens and tablets are better suited for displaying high-quality images, but less comfortable for reading large texts intensively.

But, how will the current situation within the scientific publication culture continue until 2025? Publishers foresee that publications will be increasingly available in electronic format, although, the rate at which the book publication culture gets digital is less predictable (Wells & Sallenbach, 2015; Lodge, 2015). Technical solutions will make it increasingly easy for publishers to publish e-books or even to have their own platform. Devices and displays will improve, which will make it more comfortable to read from screens and easier to display pictures (Ball & Hourcade, 2011; Freund, Kopak, & O'Brien, 2016; Myrberg & Wiberg, 2015). And, not in the last place, publishers expect that individuals will increasingly prefer e-books, or want to have the option to read publications online. In general, it seems quite certain that in the future only a minority of small, specialized publishers will offer their material in paper format only.

However, seen from a library perspective it is not clear to what extent future e-books will be a good alternative for paper books. Large publishers offer e-books in packages, as sales of individual titles are relatively expensive for them. On the one hand, these packages are cost-effective for libraries too. But, on the other hand, they also might turn out to be problematic, as is currently the case with journal packages: big journal deals with large scale publishers have led to an enormous increase of acquisition costs at university libraries (Proctor, 2013). Moreover, whether the price of individual e-books will be higher or lower than a paper book is also hard to predict. Costs of publishing titles electronically will probably be much lower than paper books. However, publishers run the risk that they possibly sell fewer copies of a title when it is available as an e-book. Therefore, certainly electronic titles with high circulation are likely to have use restrictions, for instance in the number of simultaneous users, and cost a lot more than the paper version. In the near future, publishers can hardly afford to make any concessions in this respect without risking to lose revenue (Ward et al., 2015; Ahmad, Brogan, & Johnstone, 2014; Bierman, Ortega, & Rupp-Serrano, 2010).

Of similar importance is the fact that no publisher expects the market to become e-only. In, let's say, ten years from now many readers still want to read books in paper format, despite technical progress, not in the last place simply because they are used to it. For publishers it will be easy to fulfill this need, for example via a Printing on Demand or other alternative, as long as customers are willing to pay for it. In this

respect, paper books will remain a “luxury” good, for those who want to have a book on their shelves at home or at their work. Moreover, many authors will probably want a paper version of their publication too. A book has great emotional value to them and they often want a hard copy as a tangible result of their hard work. In addition, in “local markets” it will remain relatively attractive to produce paper books, because in those markets distribution costs play a less significant role. All in all, publishers think it is likely that in the future most new scientific book titles will be available in both digital and paper format.

This would mean that in 2025, unlike now, librarians will have the choice as to whether they acquire an electronic or a paper version of a book. If that's the case, what will determine whether a librarian purchases an e-book or not? Obviously, there could be multiple reasons, such as costs efficiency, user restrictions on e-books, platform usability, a lack of space in the depots, and so on. But, what certainly will be important for librarians too, is which option meets user needs best.

Users' perspective

Reading is for most students, scientists and scholars a very important part of their work. No wonder wide availability of and easy access to literature is crucial for them (Volentine & Tenopir, 2013). In that respect, many see the advantage of the growing availability of scientific publications online, which provide access 24/7, location independent. However, certainly not all students and faculty staff are satisfied with the fact that libraries increasingly make scientific literature available in electronic format only. *E-journals* are now widely accepted, in all disciplines, by both students and faculty staff (Dewan, 2012). But e-books are less appreciated. Many berate the limitations e-books have, because of the usage restrictions and the lack of standardization. On the other hand, many experience the downsides of paper books too. No surprise that opinions on e-books and paper books differ a lot and that there is a wide variety of sentiments concerning the open shelves with books in libraries. When UUL asked students and faculty staff of UU their opinion on the open shelves the response was not only overwhelming, it ranged from: “If you are considering taking away books and making more space for study spots, that's a brilliant plan.” To: “Don't even think about creating more study places by removing books. Instead, remind people that books are awesome.”

E-book and paper book usage and availability are strongly related. As electronic titles are more widely available and better known and findable for users, usage increases (Bierman et al., 2010; Barsky et al., 2013; Calvert, 2015; Kleiner, Rädle, & Reiterer, 2013; Kleiner & Schäfer, 2012; Lamothe, 2010; Lamothe, 2013). This is also the case in UUL. Since UUL bought e-books in 2010, the number of times e-books were used increased immensely. In the same period, and long before that, each year fewer paper books were borrowed. However, given the fact that still a lot of paper books are acquired for the Humanities, it is not surprising that within this discipline paper books are used a lot more than in other domains. Figs. 3 and 4 show per discipline how many titles students and faculty staff borrowed on average, in the period 2010–2016. In all disciplines the number of loans decreases and in most

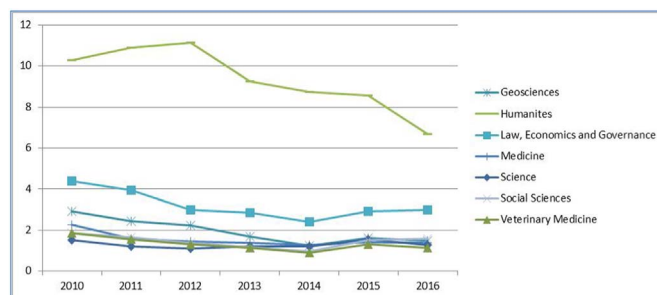


Fig. 3. Average number of paper book loans per UUL student, per discipline (2010–2016).

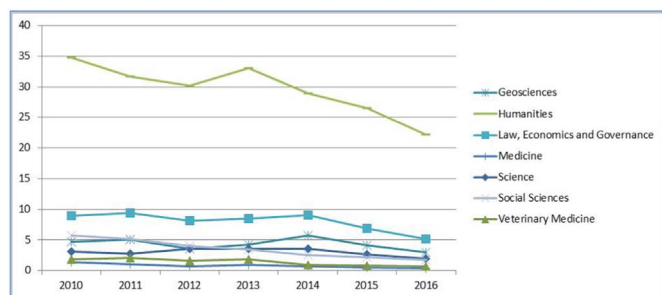


Fig. 4. Average number of paper book loans per UUL faculty staff member, per discipline (2010–2016).

disciplines usage of paper publications is low. But simultaneously, students and scholars with a Humanities background use remarkably more paper books than those of other disciplines.

Usage and user preference are not necessarily intertwined as users often have no other choice than using the format provided by their library. Most research indicates that whether a reader prefers a paper or digital book is strongly related to the topic of the book, to the age and academic status of the user and, not in the last place, to the purpose with which users read (Moore, 2015; Kimball, Ives, & Jackson, 2010; Wolff, Rod, & Schonfeld, 2015). E-books are most preferably used for scanning of or searching for information (Nicholas et al., 2008; Ward et al., 2015; Staiger, 2012). At the same time, students and faculty staff find it very unpleasant to read large texts from a screen. Therefore, those who have to read large parts of a book, or even the whole book, tend to prefer the paper version more often (Ahmad et al., 2014; Borchert et al., 2009). Besides, those who study a text intensively tend to prefer a paper version as well. Readers want to make notes or to underline texts, to internalize the information, and most users prefer to do this on paper. Moreover, it is easier to gain insight into the structure of texts on paper than on a screen (LaMagna et al., 2015; Aaltonen et al., 2011; Estelle & Milloy, 2009; Mangen, Walgermo, & Brønnick, 2013; Stoop, Kreutzer, & Kircz, 2013; Young, 2014). Although there is also some evidence that differences between reading on paper and on a screen are becoming smaller (Ahmad et al., 2014; Porion et al., 2016; Sackstein, Spark, & Jenkins, 2015).

In this respect it is relevant that research stresses the extraordinary reading practice and needs of scholars (Woolwine, 2015). In general, scholars are enthusiastic about the fact that thanks to e-books packages a lot of titles are available to them (Rowlands et al., 2007). But, at the same time they are much more dissatisfied with e-books than scientists, because they experience more intensely the downsides of reading from a screen. On average scholars read a lot more, and also much longer texts: they read more or less the same amount of articles as scientists and a lot more books (Staiger, 2012; Tenopir, Volentine, & King, 2012). Moreover, within Humanities text details and structures are essential, as is the reflection on texts. Therefore, paper books are considered more suited for this type of reading (Ward et al., 2015).

Simultaneously, other case studies show that outside Humanities most users prefer electronic publications (Corlett-Rivera & Hackman, 2014; Bierman et al., 2010; Belefant-Miller & King, 2000; Costello, 2014; Rupp-Serrano & Robbins, 2013; Simon, 2011). Within science the majority read mainly articles, of which most users prefer the electronic to the paper version. For instance, within Veterinary Science many prefer to have online access to publications, because veterinary research is mostly done within laboratories or even off-campus which makes location independent access to information almost a necessity (Marshall, 2014). This is also the case within Geosciences, although within this particular discipline there are also huge concerns about the quality of pictures in e-books (Foote & Rupp-Serrano, 2010). And even though, for example, Law students and faculty staff are asking for more e-books, they also have the problem that often the status of online texts is harder to assess than paper texts (Ashokbhai Bhatt, 2014; Outler,

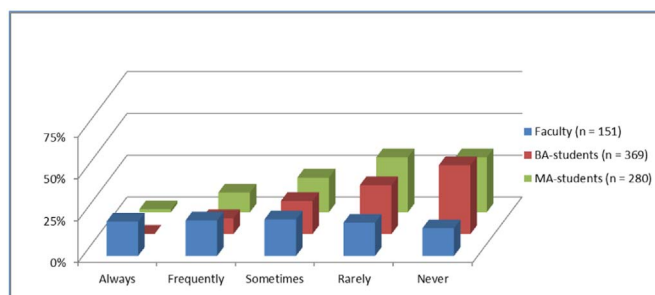


Fig. 5. Result of the survey held in UUL, on the question "what do you do when you visit UUL?" Answer: search or read literature from the shelves. N = 800.

2015; Peterson, 2008; Soetenhorst, 2014). So, in general, in most disciplines e-books are the preferred format, but at the same time there are circumstances in which users might prefer using a paper book.

What does this mean for the usage of the open shelves in UUL? Of course, those who use more paper books use the open shelves more frequently. Participants of the UUL focus group sessions underlined disciplinary differences. Besides, during the focus group sessions there was a lot of discussion on the differences between students and faculty staff. The vast majority of BA- and MA-students in UUL rarely or never used the literature on the bookshelves. Simultaneously, a large part of faculty staff frequently or even always search or read literature from the shelves when they visit UUL (see Fig. 5).

UU students explained that they preferred literature that was easily accessible for them. Most students like using paper books, especially those who read long texts (Dewan, 2012; De Oliveira, 2012; Poe, 2011; Smyth & Carlin, 2012). But, often they have limited time to write a paper and the fact that e-books are widely available is in that respect very convenient to them. Students often find it hard to locate publications in the UUL open shelves, as is the case in many other libraries (Hahn & Zitron, 2011; Hinze et al., 2012; Li & Klippel, 2012; Schoonover & Kinsley, 2014; Stempler, 2013; Yvonne Jones et al., 2011). Besides, although students dislike the restrictions on e-book usage, in general they are satisfied with the electronic sources in their library (Rojeski, 2012). Most students do not often read books from cover to cover, so they are less affected by constraints of reading for a long time from a screen (De Oliveira, 2012). As in most other libraries, they visit UUL to use a desk to study, not to consult literature from the shelves.

Faculty staff stated during the focus group sessions that practical considerations are important for them too. The majority of them use digital publications mainly and prefer online access to literature. But, especially scholars use, or even prefer, paper publications and value the physical library with its open shelves. While searching literature in the shelves faculty staff claims that they often find unexpected relevant publications, more frequently than by searching online, where they are forced to really narrow their search to limit the number of search results. Besides, they find it easier to assess a paper book on its relevance than an e-book (Woolwine, 2015; Rowlands et al., 2007; Peterson, 2008; Beard & Bawden, 2012; Tenopir et al., 2012; Bird, 2015; Hinze et al., 2012; Ross, 1983). They like standing in front of a shelf to get a quick first impression of the available literature, briefly flipping through books (Lynema, Lown, & Woodbury, 2012; Martin & Quan-Haase, 2013; Sewell, 2013).

However, both scientist and scholars hardly visit UUL, also those who prefer using paper books. They experience a lack of time to go to the library. They also point at the fact that the information on the shelves is becoming less up to date as a result of the ongoing digitization, which makes it less worth to browse the shelves. Besides, and this is very important too, they experience a lack of facilities to properly examine books. Most desks in UUL are taken by students, who, to the annoyance of some scholars, hardly use the books that surround them. In general, faculty staff considers UUL as the domain of students. The

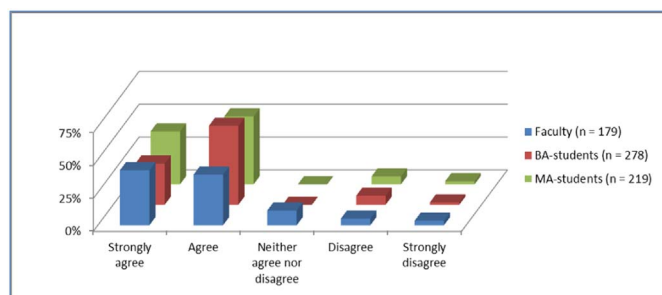


Fig. 6. Result of the survey held in UUL, on the question “what do the books in the library bookshelves mean to you?” Answer: to me, books on the bookshelves create an intellectually stimulating and supportive environment. $N = 676$.

result is a paradox. Students are by far the most frequent visitor of the library, but a large part does not use the literature on the open shelves. On the other hand, the open shelves are appreciated the most by faculty staff, who do not visit UUL very often.

Does this mean that open shelves in UUL do no longer play a role, besides providing information to students and faculty staff from Humanities and some other disciplines? No, the role of library bookshelves is not limited to the usage of the books. The shelves are not only a source of information, but also provide a stimulating and supportive environment. As shown in Fig. 6, almost all students and faculty staff that visit UUL agree on this, despite the fact that the majority of them hardly use the books on the shelves. Especially students like studying between the books, because they radiate peace and scholarship. In this respect, open shelves are still an important part of the library space, also for those who see the library mainly as a place to study.

Conclusion

University libraries are increasingly transforming into study environments, in which open shelves are just one of a variety of other library services. What role could the open shelves play in the future library space? With the ongoing digitization, it is quite sure that in ten years from now the open shelves will only be a potentially important source of information in the Humanities and to a lesser extent within several other disciplines. In most disciplines electronic publications will be dominant and therefore paper books on shelves will not be used a lot. Based on these developments one could argue that the days of the open shelves are over or that books in libraries will turn into nothing more than academic wallpaper. These assumptions will become self-fulfilling prophecies if libraries don't fundamentally rethink how they could strengthen the role of open shelves. Although outside Humanities a relatively small number of open shelves would probably suffice, open shelves could continue to have a major contribution to the study environment in future library spaces.

Libraries could use the shelves to provide access to publications that users prefer in paper format. Especially scholars value the open shelves with books in libraries, as long as the information in these shelves is easily findable, coherent and up to date. This is strongly related to their reading needs. In general, scholars often read long texts and intensively, for which they consider the paper format more suited than the digital alternative. Obviously, this might change in the future as e-books, and the devices that are needed to read them, improve. But, in the foreseeable future, monographs should be preferably made available both in electronic and paper format. Then, users could use the digital version if easy, location independent access is important to them or if they want to look up information. And users who, for instance, don't want to read large parts of a book from a screen can use the paper format (Costello, 2014; De Oliveira, 2012; Durant, 2015; Hillesund, 2010). More realistic is, however, that libraries will be able to acquire only one version of a title. Also in that case, especially scholars probably want their library to buy many monographs in paper format. Besides, in the coming years,

many book titles still won't have a digital alternative, although publishers expect this to change. Moreover, it is still unclear how favorable the conditions of future e-books will be. It is far from unthinkable that related to monographs the paper format will be very important in, say, ten years from now and libraries should consider carefully how these paper books are best presented to future users.

In that respect, it is quite striking that most open shelves are still primarily meant for paper publications only, although library collections consist of both paper and digital publications. There are numerous possibilities to provide library visitors information on digital publications via screens (Kleiner & Schäfer, 2012; Kleiner et al., 2013). When these screens are placed in the open shelves, besides the books, visitors could be provided with information on titles available in digital format too. This might be a way to make sure that the information in the open shelves is coherent and up to date, even when many publications are only available in digital format. Besides, this would make it possible to better integrate the paper and digital collection of libraries and to invite visitors of university libraries not to limit the literature they use to one format, as currently is the case with the digital oriented students. Shelves with screens provide the opportunity to exhibit both paper and digital literature in the library space.

Moreover, librarians could enhance the inspiring role that shelves with books have. Even those who never use books underline that bookshelves contribute to a stimulating study environment. Until now, however, many shelves in university libraries are primarily designed to store books. It might be very interesting to rethink the design of library bookshelves and to find creative ways to make them even more inspiring. While doing this, libraries should also take into account the different needs of students and faculty staff. Students like to have as many study spots as possible, preferably surrounded by books. For faculty staff, on the other hand, study spots should be designed primarily to study literature. Then, the open shelves could still play a role within the library space of the future, providing access to a hybrid collection and an inspiring place to study.

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