Feature Article

The library as a physical learning environment at the Karolinska Institutet University Library

Carina Ahlberg
Karolinska Institutet University Library, Stockholm, Sweden

Abstract
This article describes the development of the learning environment in the library at Karolinska Institute. It all began with a university-wide project, but when taking into consideration what makes a library special, the librarians had to find their own application of the pedagogical thoughts behind the project. The students' needs are changing depending on situations and times, so the library environment needs to be flexible and regularly updated accordingly.

Key words: libraries; universities; students; case reports; learning.

Introduction
How do we make use of the library space when the physical collections are disappearing from it? What will our students need to support their learning, now and in the foreseeable future? In fact, do they need the library as a physical place at all? And if so, how can we connect the physical and the digital library? These questions we have tried to answer through different User eXperience (UX) methods in our library, in a small scale in 2011 and in a larger scale in 2018-2019. This has resulted in various improvements of our library spaces, and lessons learned for the future. As Susan Beatty (1) concludes: “Students choose library spaces that support their learning preferences. They are aware of how the design of library spaces influences their choices”. (Figure 1).

Future learning environments
Eleven years ago, in 2009, Karolinska Institutet (KI) together with Stockholm City Council launched a project called Future Learning Environments in Health Professions Educations (2) The aim of the project was to improve students’ learning environments on campus and in hospitals where KI educates students.

Background
Karolinska Institutet is a medical university in Stockholm, Sweden, and the university library is situated in two different buildings at two different university campuses, in Solna north of and Flemingsberg south of Stockholm. Even so, we consider ourselves to be one library. We have a staff of about 100, whereof about half are librarians, and the rest is a mix of different professions such as IT-technicians, administrators, statisticians etc.

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Fig. 1. Students choose spaces that support their learning preferences, Photo: Erik Cronberg.

Address for correspondence: Carina Ahlberg, Karolinska Institutet University Library, Fe 200 SE 17177 Stockholm, Sweden. E-mail: carina.ahlberg@ki.se.
3. peer-to-peer learning: any new space should foster peer-to-peer learning.

**Implications for the library**

These principles are of course applicable to the library as well, and rather easy to accommodate. Our group study rooms had been booked weeks in advance for many years, so it seemed pretty clear that they were needed. They were also equipped with whiteboards and computers with large screens, which supported collaboration as well as visualization. Apart from them we also had tables and chairs throughout the rest of the library, where the students could work in groups, so all we really needed to do was to get some mobile whiteboards. However, a question we started to ask ourselves and eventually also our students was: is there anything that distinguishes a library compared to other learning environments? Might there be something more that we should think about when we re-think the layout our library?

**The first survey**

In order to find out, in 2011 we started a project where we placed ipads throughout the library and through them asked our students what kind of study spaces they needed. We got in total 90 answers. This is not representative since we have in total around 6000 students, but still an indication of what our visitors find important enough to let us know about.

It turned out that the students in Flemingsberg had somewhat different wishes from the students in Solna. For instance, in Flemingsberg 23% of the students wanted work spaces with stationary computers, in comparison only 3.5% of the students in Solna did. Additionally, in Solna 11% of the students wanted quiet work spaces where laptops were not allowed, but only 3% of the students in Flemingsberg saw the need for that. The students in both campuses, but especially in Flemingsberg wanted more group study rooms. Simultaneously our users still expected the library to be a quiet place where they could read and study. (Figure 2).

The difference between the campuses we can only speculate about. Possibly a larger percentage of Solna students own their own computers and bring these to campus. Consequently, the library needs to be flexible and accommodate varying needs, something that also is supported by literature (3).

**The second survey**

2018-2019 we worked with so called “customer journeys” (4) where we interviewed 40 students from 14 different study programs about their life as KI students. This was a much larger study, but the results supported our 2011 findings.

Additionally, the new results suggested that the library staff in the information desk makes the students feel safe in the library. “Safe” was the word of choice, possibly because parts of the two campuses can be rather dark and empty at times. The students also expressed a need for our help “just in time” in their studies, as opposed to “just in case”.

**Something in between**

The results of the two studies suggest that the library is something in between. It is not a formal learning environment like a classroom, where the teacher has a clear-cut authority and there are expectations of how you as a student should behave. (Figure 3).
Neither is it a totally informal environment such as restaurants or other meeting areas. The university library is clearly a part of the university, just as much as a classroom. But students can choose to just sit and study in the library, or to do group work, it is their own choice. The library has professional staff, but we are not teachers – and we do not grade the students. Anecdotal evidence suggests that this sometimes makes us easier to talk to than a teacher or a supervisor when students are confused or at a loss in their studies.

A flexible library
The library should be a quiet place for studies as well as a place that can be rather loud, when for example group studies or a lunch seminar is taking place. It should also include plenty of group study rooms, and be well equipped with for instance power outlets, whiteboards and computer screens. The tables should be height adjustable if possible, or at least tables of different height, and there should be plenty of different types of chairs, suitable for different people.

Like most libraries we did not have lots of money or time, so we needed to first see what we could do with what we had or at a low cost. The costlier projects needed to be spread over a few years, and now, after almost ten years, we have come pretty far.

Solutions: zones, signs and carpets
First of all, we decided to divide the library into different zones, with different levels of noise. And we also needed to make it easy to understand how the users are expected to behave in the different areas. We could of course do that with the help of signs, but when we made study visits for instance at airports, malls and IKEA and talked to experts we realized that there is a risk involved with having too many signs. You can easily become "sign blind", something that is well known when it comes to traffic signs, when you don’t see any signs at all anymore. Consequently, we should try to keep the signs to a minimum and send the message in other ways. For instance, through the furnishing. Soft couches and armchairs send other signals than separate desks and chairs (5).

Another way to clarify the different areas has been the use of textile carpets in different colours. The carpets have helped immensely with the sound problems that otherwise are almost unavoidable in a large open area as one of our two libraries is.

We also wanted to use the opportunity to reinforce our identity as part of a medical university and also, that the library as a physical place is connected to the digital library. This was made possible by:
1. Using the colour palette recommended in the graphic profile of the university. The colours are mainly intended for use in print or on the web, but we have used them in our public areas as well, with good results. The can be seen on the frosting as well as on the carpets and on some walls (Figure 4).

2. Creating our own signature frosting of the large glass areas in the library. We were lucky enough to have a librarian that is also a trained graphic designer, and he created the patterns for this – here you can see a pair of lungs and an ECG curve (Figure 5).

3. Using "the square" in the library as an open space where anybody at the university can give a presentation (Figure 6). The most common event...
has been the lunch time lectures that the professors at the university give on Thursdays. But it is also used for both large events like the Welcome days where we welcome our new students to the library in the beginning of each term, and smaller presentations for a more limited group – provided that anybody can join if they want to.

A problem to solve: the sound of silence

The most difficult part has been – and still is – to create the silent areas. Especially the group study rooms in the middle of the library are difficult, because they have glass walls and no ceilings. Unfortunately, we so far have not been able to place any ceilings or other kind of soundproofing material over the rooms, since that would prevent the sprinklers above them from working. It helped a bit when we put carpeting on the floors, but not very much. Now we are thinking about soundproofing raster ceilings that won’t get in the way of the sprinklers, and about adding more textiles into the rooms (Figure 7).

Otherwise, I think it has worked well to keep the noise near the entrance, where people meet and where we also have our support functions. The library then becomes quieter the further in you go.

A library for the future

All the experience we have had over the years has helped us when we now are planning a re-built and renovated library in Solna. The only part of the old library that will be kept as it is, is the quiet reading room, which is newly renovated, with furniture that send a clear signal that you are supposed to work in silence. Here we also contacted a light specialist, since it is a rather dark room and we really wanted the light to be good.

We hope that the renovation will be ready by the end of this year, and that it will be a both beautiful and useful place for students, as well as for staff.

The project has been planned with the use of UX methods in a small third survey, where we made some new, rather surprising discoveries: for instance, that many students wished for study rooms for just one person.

Even if the students usually come to the library in groups and book a group study room, they still want to study individually. They obviously want to have each other close, in case they need to ask or discuss something, even when there is no formal group work on their schedule. This made us, in collaboration with the architects, change our plan for more collaborative areas and instead create places for more individual studies without any demands for complete silence.

Conclusion

We hope that we have created a library that lasts at least a decade, but something we have learned is that constant change is inevitable, and each situation, and each student, is different. We need to keep listening to our users and to be as flexible as possible, then hopefully the library will continue to be their workplace of choice, even in the future.

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