

Quality Assessment of Pontificia Universidad Católica Argentina Libraries Based on UX Management Model

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Introduction and Context

In the last decade, trends in higher education have challenged the role of university libraries. Significant changes in universities, such as the growing incorporation of virtual distance learning, emerging technologies, digital transformation and new study topics have impacted the way of studying, teaching and learning.

The identification of these changes in education from the dynamics of our university led us to analyze the situation at the national and international level and, in turn, allowed us to better understand the requirements of the academic community. This analysis was based mainly on a survey of trends in higher education and how they impacted on academic libraries, taking as reference different international reports published in recent years.

Two of these reports are the *Horizon Report* by EDUCAUSE¹ and *Top trends in academic libraries* by ACRL Research Planning and Review Committee², which identify trends in education based on the analysis of the projects and challenges of the world's leading universities. These reports, which interpret trends in relation to technologies and libraries, are essential tools for planning the next strategic objectives of our institutions.

Among the changes associated with higher education, new study habits and information consumption preferences, open science, AI, and the use of technology in the teaching process stand out. These changes have encouraged students to manage their own learning, transforming it into intentional learning, where the student becomes more autonomous and protagonist.

On the other hand, these reports reveal trends regarding the design of learning spaces, the use of open educational resources, the incorporation of multidisciplinary approaches in teaching, a growing adoption of the culture of innovation, the student perspective, the measurement of learning processes and an increase in strategic alliances, among others.

Significantly, academic libraries have suffered a decline in the use of physical collections and, in many cases, in the budget to develop them, which has had an impact on the capacity to acquire and update their contents. At the same time, in line with these trends, the

incorporation of analytical tools to evaluate information resources and improve the quality of library services has emerged.

In this scenario, librarians face new challenges and opportunities, such as research management, in which the library collaborates and is key to the scientific production of universities, or in support to teaching, since librarians empower professors in the development of their pedagogical skills. These changes drive the review and redefinition of their roles and competencies in this dynamic ecosystem in which the library becomes the protagonist as a learning environment.

However, these trends are accompanied by a new approach to the organization and management of libraries, where the user is placed at the center. This leads libraries to rethink their spaces as spaces for creation and learning, update the criteria for the management of hybrid collections, design new services and evaluate the possibility of incorporating new methodologies for their organization.

In addition, they show that libraries should foster change management in their teams and encourage the incorporation of new skills to promote leadership that can be inserted in the academic development of their communities. In this context, the academic library has the responsibility to demonstrate how it impacts the student experience and to show its value and contribution to the educational institution.

Libraries must broaden their vision to ensure not only access to information resources and services, but also meaningful experiences that generate emotional, cognitive and behavioral recall and connection.

Therefore, it is critical that they focus on understanding how users interact with the library, what needs they have, and how they perceive the effectiveness and usefulness of the services and spaces provided to them.

It is important to recognize that it is necessary to measure the level of user satisfaction and the success of technology initiatives with an educational purpose. Quality is based on the users experience since they are the center of the library, so it is essential to know their perception and involve them in the design process to develop the services.

Consequently, libraries must pay attention to user experience (UX). UX refers to the emotions, experiences and behaviors of users when they use a service or product. This notion, which emerges and is applied in other fields, is booming in our discipline, as it offers us crucial tools for library services loyalty with their communities. In Ashley Karr's interview with Skot Carruth (UX professional and specialist), she says: "I think one unified way to

define UX is that it is a perspective—a lens through which you can view your product, service, or organization. It is the lens through which your users view you, as well”.³

Concretely, UX methods allow us to understand and improve the experiences that our users live in the physical and virtual environment, providing, in addition, deeper information about their desires. An essential point is to discover the needs that they themselves are unaware of.

While UX is a term commonly applied to evaluate interaction on websites and mobile applications, the same usability principles can be considered to apply to libraries in physical and virtual spaces and services.

Finally, the fundamental activity of an academic library is to align itself with the mission of its educational institution. This means that libraries must redesign and align their services, print and digital collections, to meet academic priorities and satisfy the needs of their communities.

In recent years, academic libraries have had to discern and define a new role that considers their integration in the teaching and learning process, in research and their social function. This challenge implies assuming that libraries must be a creative and dynamic environment, which requires deepening knowledge about the needs of their community in order to improve the learning and research experience.

In Latin America, there is no standard for the evaluation of academic libraries. Some countries have quality guidelines, but they do not have an instrument for collecting standardized data from the user's perspective to compare results.

In Argentine university libraries, user studies to evaluate their services are infrequent, so very few have conducted this type of study. Therefore, from my point of view, LibQUAL+® has become the standard par excellence to apply in our region.

It is for this reason that the library system of the Pontificia Universidad Católica Argentina (SIBUCA) has been applying it every three years for the last ten years, together with other methodologies that allow us to know and investigate the needs and desires of users, such as observation, focus groups, co-creative workshops, photographic records and others. All these methods and tools are integrated in the design thinking methodology implemented in our libraries.

As a complement, together with the University of Granada we have developed a scheme of indicators to measure the performance and power of our libraries, which allows us to cross

the qualitative information from users with the quantitative data from the activity of the libraries and, at the same time, to compare ourselves with others.

The results of the evaluations and the application of these methodologies allowed us to promote organizational cultural change by transforming the libraries into inspiring, collaborative and meeting spaces that impact the learning experience and the integration of the community. These results are crucial for informed management and planning. Whether positive or negative, they provide valuable insights into user preferences.

In 2013, we signed an agreement with the research center of the University of Granada, SECABA Lab, to apply LibQUAL+ in all our libraries. SECABA has developed a software application for the implementation of the LibQUAL+ methodology including data collection and analysis. It provided us with:

- Customized web interface for data collection.
- Translation of the survey into Spanish.
- Customization of the survey in terms of type of users, courses, etc.
- Possibility to include additional questions specific to each library.
- Possibility of incorporating an open-ended question for comments and observations that users may wish to express.
- Analysis of the results.
- Generation of reports by libraries, by type of users, etc.
- Generation of radial graphs to visualize the strengths and weaknesses of each library.
- Recommendations for libraries.

Why We Choose LibQUAL+

The first criterion we considered was that it should have broad support in the library world. It makes no sense to develop ad hoc surveys, since the results cannot be compared or benchmarked between libraries and one of the main objectives of the study is to find and apply best practices.

LibQUAL+ meets all the characteristics and, as I mentioned, it is a standard in our field. We consider the objectives of LibQUAL+ to be:

- Foster a culture of excellence in the provision of library services.
- Help libraries to better understand what users perceive as quality services.
- Collect and interpret user feedback over time.

- Identify good practices in library services.
- Improve librarians' analytical skills to interpret and act on data.

A major benefit of this survey is its ability to discover successful practices and establish benchmarks. Currently, the location and identification of good practices is an indispensable requirement in any quality study and must be an essential part of the process.

Library Transformation Based on LibQUAL+ Results

From 2014 until today, the results of the application of this methodology guided us in which aspects and services of the libraries we needed to improve.

In 2014 the results were critical. All dimensions (affective value, library as a space and information control) required a thorough review. Users told us that they observed low quality in our services and that we were far from fulfilling their wishes.

A strategic plan was designed to address the identified areas for improvement and ensure the incorporation of methodologies and tools for systematically assessing community needs. At the same time, a training plan was developed for library staff to strengthen and develop skills and knowledge to drive change and innovation and impact service quality.

In 2018, although the results were notably higher, there were still opportunities for improvement. Customer service was no longer an issue, but collections and their access, communication and the website and study rooms were.

This study showed that, although the physical collections had a low rating, they were not highly desired by users. Electronic collection availability and facility of access were. However, users ranked library spaces above them.

At the same time, the DMS-core showed us that a significantly higher percentage of users' preferences for each dimension had been achieved compared to 2014. However, spaces and collections were still below their requirements.

The analysis of the data led us to the conclusion that in addition to incorporating the identified improvements, we needed to change the organization and management of the libraries. During the period 2019 to 2021 we focused on organizational renewal.

Our functions became user-centered so it was essential to redefine the management model of the libraries. We moved from being an organization based on the book to focusing on the needs of the community.

The development of this process made it possible to know the users' opinion on the quality of services and to define new management strategies. Additionally, a bibliographic survey was conducted to study and identify trends in the organization and functional structure of the world's academic libraries.

This systematic analysis resulted in a comprehensive review of library positions and services. The approach began with the need to collect and evaluate data on staff activities, tasks, and responsibilities. Like many other libraries in recent years, the provision of digital resources and services became the focus of our university. For this reason, tasks associated with the virtual environment were incorporated, but without giving up a significant percentage of time on activities related to library print material.

Changes were gradually introduced in the management of working areas. Teams were created to implement new activities or projects in the short term, as in the case of the Contributions to Innovation Group, integrated representatives from all areas to study success stories in university libraries and analyze the feasibility of applying them in our libraries.

The results were excellent, not only because of the benefits in the implementation of new services or technological tools, but also in the work environment, which improved group dynamics and communication among the teams. This modality also helped to identify the skills and knowledge of the personnel in order to allocate new tasks and define a training plan to enhance both activities and professional development.

A specialist in people-based innovation was hired and the team focused on adapting to the new information technologies recently incorporated in our libraries, upgrading their skills, competencies and knowledge.

We worked on identifying key opportunities for our libraries to contribute to the university's academic and strategic objectives. This section was based on the definition of a new vision and the pathways that would guide the design of the strategic plan. We decided to forge our identity as a library system. So we agreed to be a library system that:

- Enhances the holistic learning experience.
- Promotes collaborative learning and meeting spaces.
- Innovates by offering dynamic and flexible spaces that inspire and encourage creativity.
- Preserves intellectual heritage.
- Encourages multidisciplinary work.
- It is accessible from anywhere and connected to other libraries around the world.

We took on the challenge of transforming ourselves into an inspiring learning environment for students, teachers and researchers with the aim of making an impact on both the library and academic levels.

At the library level, we set out to achieve greater use of information resources, spaces and tools to integrate electronic content into the Virtual Learning Environment. At the same time, to improve communication and feedback from users.

On the academic level, we established that our main challenges were to collaborate in the performance and success of students, in the performance of professors in their pedagogical role, and to enhance the visibility of the academic production of researchers.

To consolidate the functional framework of SIBUCA and ensure that the guidelines we had adopted were implemented facilitate the transformation in all dimensions. With this in mind, from the very beginning, SIBUCA designed its management model based on the concept of UX, which refers to the emotional responses of users when interacting with a service or product.

Today, both UX and design thinking are considered fundamental methods to ensure the user's perspective in the development of the library. In this regard, our library teams focused their attention on identifying changes in the habits of our users.

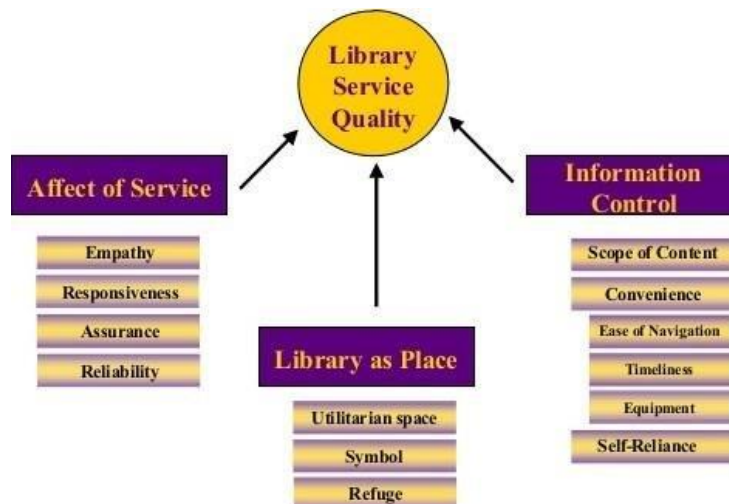
This situation led to the incorporation of different methodologies to investigate and study the behaviors of our community more thoroughly. As mentioned above, in 2022 the LibQUAL+ methodology was applied again with the aim of measuring the degree of satisfaction and quality of the library from the perspective of users with respect to three dimensions: services, space and collections (Figure 1).

The results of this study showed that the services and collections did not meet the new demands for information and that the physical spaces were inadequate for the new ways of learning and studying.

Therefore, it was concluded that library staff should modify their way of working and that it was essential to rethink and design a new organizational model focused on the needs and expectations of users.

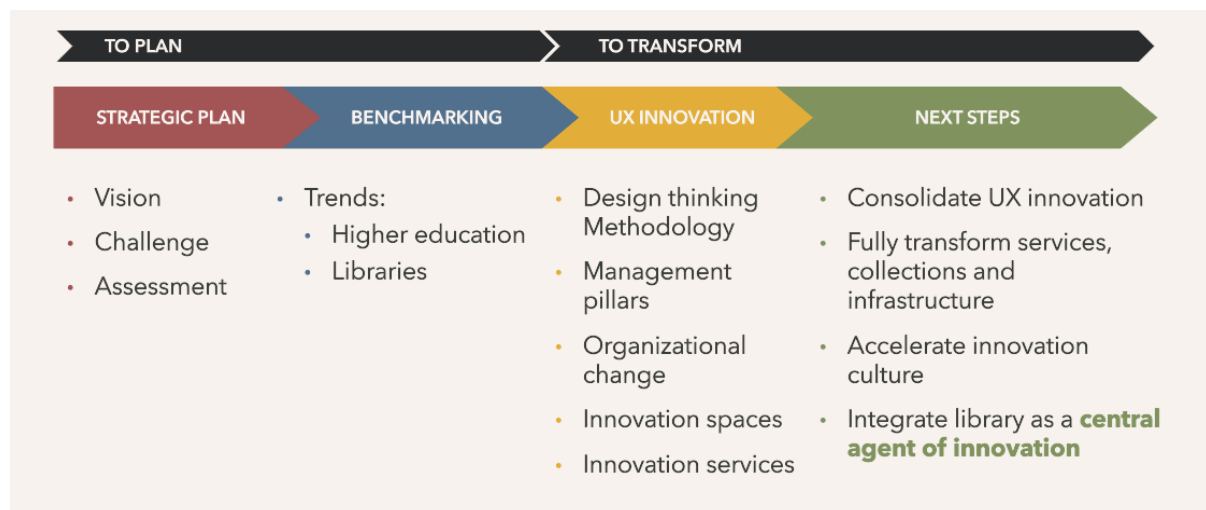
The consolidation of a new management model that would lead to the transformation of the libraries was advocated, and a path was established for the renovation of the physical and technological infrastructure. Figure 2 shows the path taken to achieve the transformation of the libraries.

Figure 1. LibQUAL+ Measurement of Library Quality



Source: LibQUAL+.org

Figure 2. Roadmap for the Transformation of SIBUCA Libraries

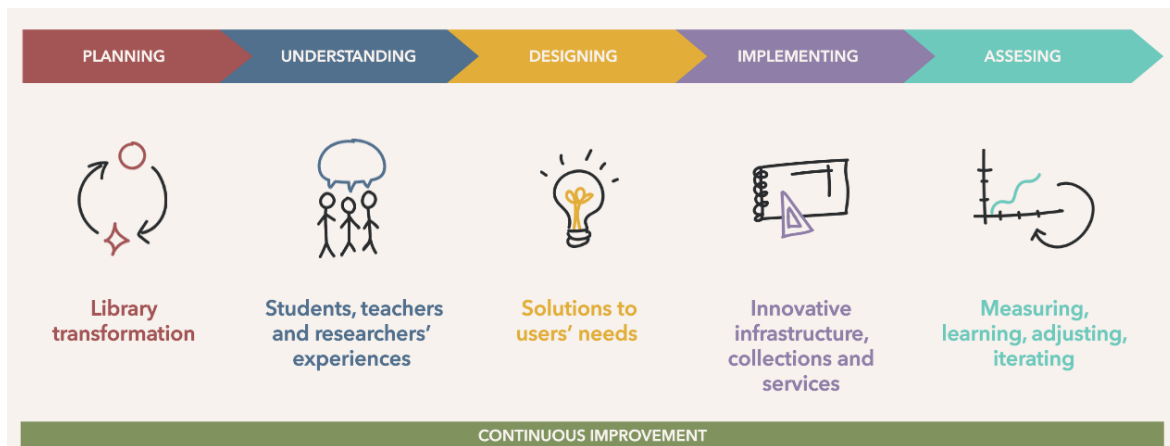


Source: Own elaboration.

Starting in 2019, all functions became user-centered and were designed to provide an optimal experience through strategic services that directly contributed to learning, teaching and research outcomes.

Teams started working by objectives and incorporated different agile methodologies to develop their tasks and activities; for example, design thinking (Figure 3). Design thinking is a method of problem solving with a creative, practical, intentional and repeatable approach that stimulates innovative solutions and responds to the real needs of users, improving the result obtained and, as a consequence, their experience in relation to the service.

Figure 3. Design Thinking Model for the Transformation of SIBUCA Libraries

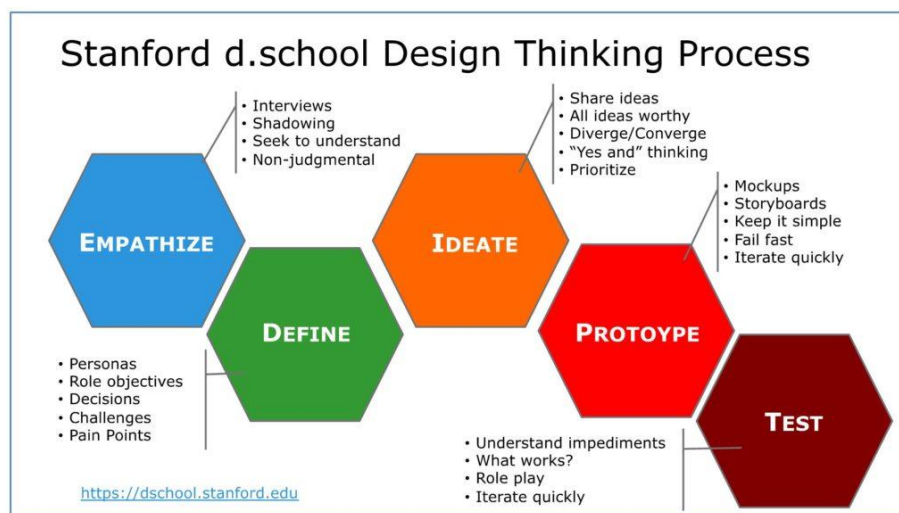


Source: Own elaboration.

As described in Figure 3, the first step is planning, followed by research into the experiences and requirements of our users to consider adequate solutions. The fourth stage is implementation, which introduces innovation in spaces, services and collections. And finally, evaluation, applying measurement indicators, adjusting and iterating to achieve continuous improvement.

The objective was to carry out the organizational cultural change of the SIBUCA libraries to transform them into a space that promotes inspiration, creativity and enhances users' skills through the exchange of knowledge. Figure 4 shows each stage with its own tools.

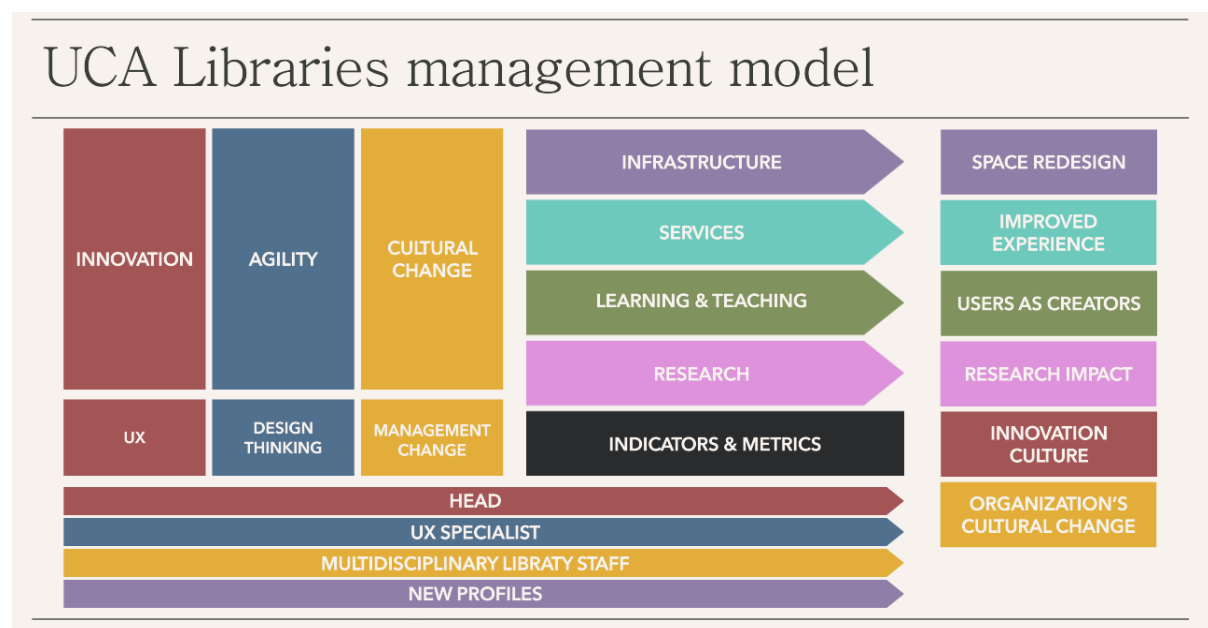
Figure 4. Stage Design Thinking



Source: Stanford d.school.

As shown in Figure 5, the management model is based on three axes located in the vertical lines: agility, innovation and cultural change. And, in the horizontal lines, the strategic lines with their objectives. As support for evaluation and iteration, there are indicators and metrics to measure results, as well as methodologies to ensure change and innovation management. Underneath, acting as support and undoubtedly as the most important one, is the library staff composed of a multidisciplinary team that incorporates and integrates new profiles.

Figure 5. SIBUCA Libraries Management Model



Source: Own elaboration.

The vertical axes provide management with the necessary tools for teams to develop their objectives and activities. The *Agility axis* provides us with the design thinking methodology to carry out the library model focused on improving the user experience. This axis supports four objectives that feedback and depend on each other for the integral progress of the new library model:

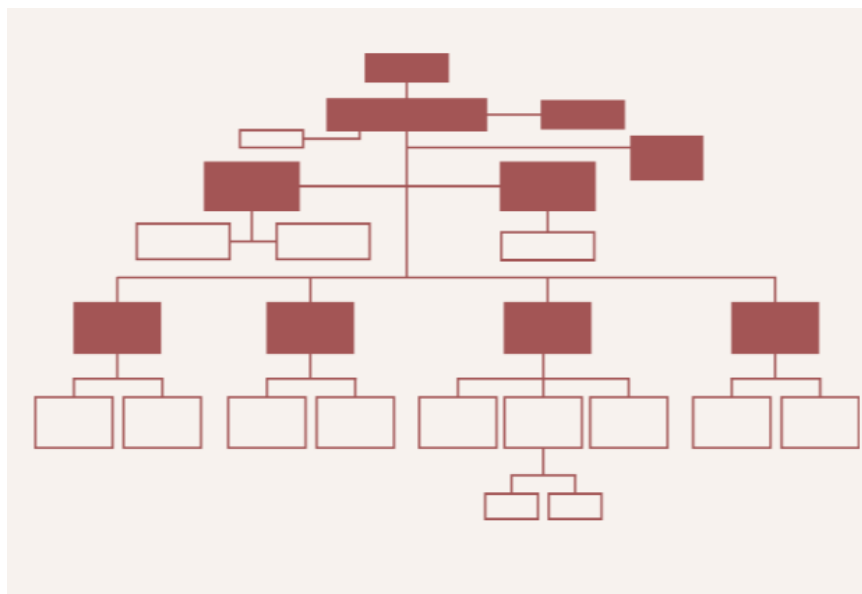
- Transform the physical and virtual spaces of the library.
- Provide simple, user-friendly and efficient services.
- Deepen the integration of the library in the teaching and learning process.
- Generate a user-centered communication plan.

The *Innovation axis* focuses on the creation of meeting and creative spaces where students, teachers and researchers can enhance their academic challenges using the library's bibliographic resources and spaces. It involves modifications to the physical and virtual space as well as the development of a plan of activities and communication to spread the culture of innovation. As an example of how the use of these methodologies has impacted our libraries, below we include our experience in the transformation of the spaces of the UCA Central Library of Buenos Aires.

The *Cultural Change axis* promotes change management in the library team, in line with the university's vision of organizational change, and seeks to serve as a multiplier in the integration of the university with its faculties and teams. It comprises the design and development of a measurable strategy of activities that drive organizational change.

In support of organizational change, a new organizational structure model for the libraries was established and the functional areas, their objectives and scope were updated. In other words, we evolved from a traditional model (Figure 6), vertical and based on processes, to a circular one, centered on people and based on users' needs (Figures 7 and 8).

Figure 6. Traditional Organizational Model

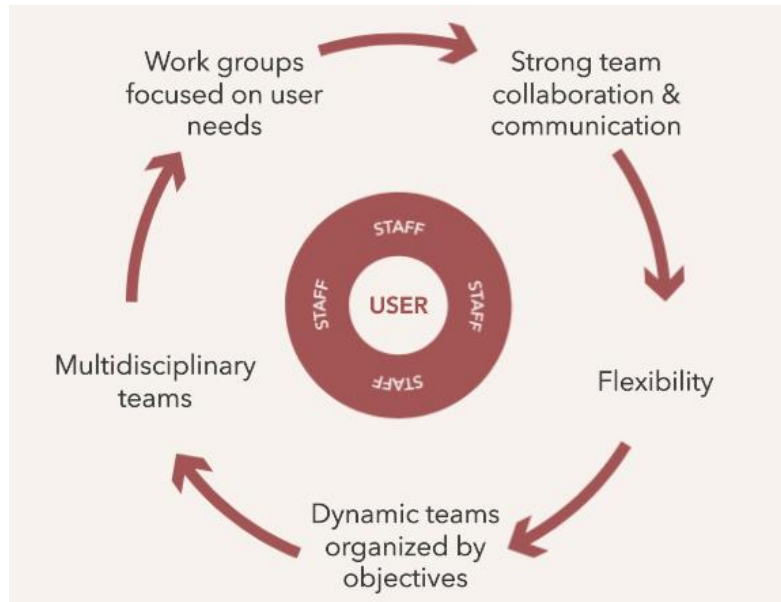


Source: Own elaboration.

We recently realigned our model into an even more flexible and dynamic structure, based on the operation of multidisciplinary teams from all libraries in the system, organized by objectives and projects based on user needs. For this reason, it is completely circular with a design that allows staff to move within the organization. At the same time, it facilitates the

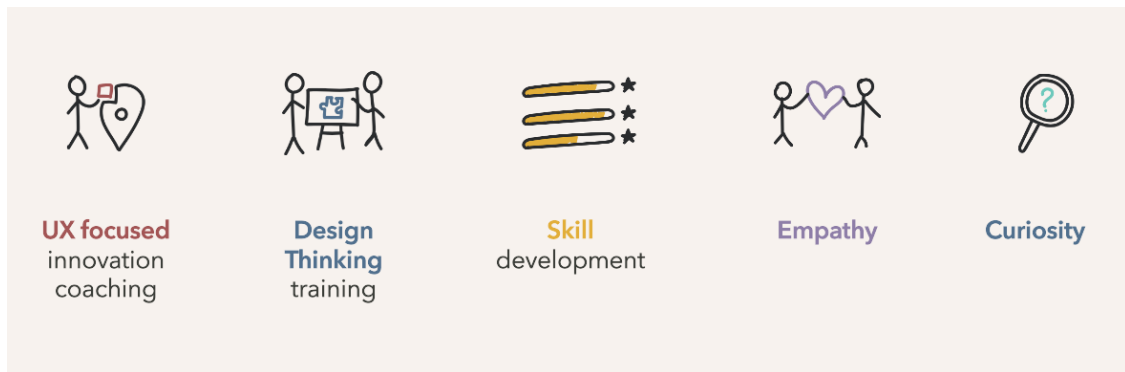
incorporation of professionals from other disciplines to empower the teams towards innovation.

Figure 7. Evolution of the User-Centered Organization Model



Source: Own elaboration.

Figure 8. Skill Support Framework for a User-Centered Organization Model



Source: Own elaboration.

The design of this model is open and ready to evolve, with a structure that will allow it to adapt to future educational environments.

Transformation and Creation of Learning Spaces at UCA Buenos Aires Central Library

The presentation of this experience seeks to be a contribution to academic libraries through the evolution of our libraries.

Historically, academic libraries have defined their spaces by assigning the greatest prominence to the physical collections, but in the 21st century they have adopted a utilitarian approach to the design of their buildings, focusing on the needs of people. Thus, library spaces are now designed to support social learning and encourage the co-construction of knowledge outside the classroom.

Therefore, the design requires a plan that includes the needs of users beyond aesthetics, operational requirements of staff and collections. Consequently, by considering the community and their participation in the planning and design processes, the likelihood of a positive outcome is greatly increased. Evaluation methods that help to form a picture of what is needed vary widely, from large-scale survey instruments, such as LibQUAL+, to less formal observational techniques.

The transformation of our library spaces was intended to be conducive to learning and community integration. We referenced the qualities defined for the design of spaces in IFLA *Library Building Guidelines: Developments & Reflections*⁴, specifically from the section on buildings and equipment. This documentation provided us with training, points of view and reflections on library planning.

It was established that a good learning space should be functional, attractive, adaptable and accessible, and at the same time, flexible, welcoming, interactive and well organized.

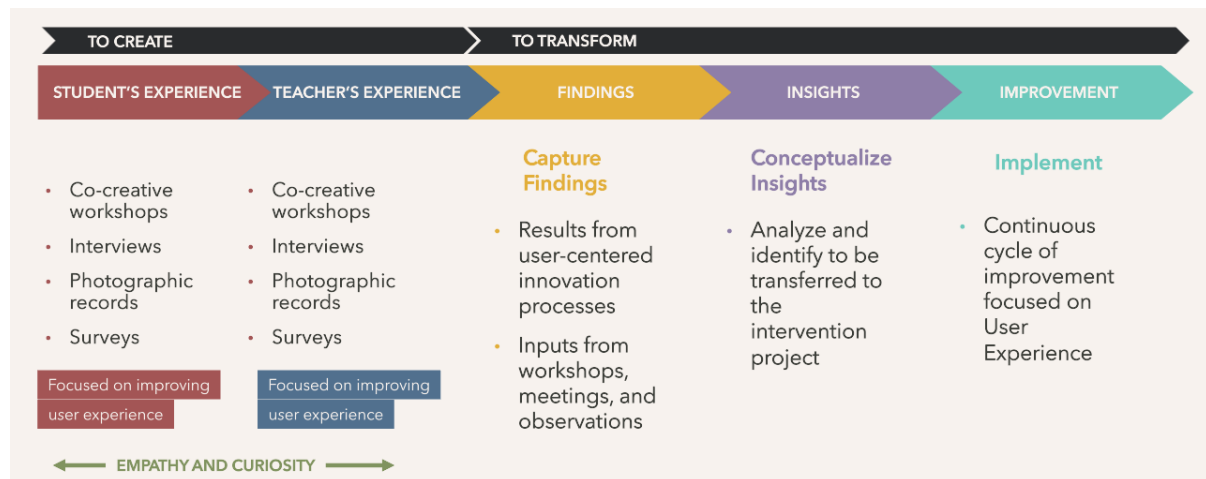
Although there is extensive literature on library space planning, it is important to go through a benchmarking stage to examine the experience of others and better understand the environment where our users are likely to move and interact. Then, it is essential to validate directly with them how they inhabit the spaces and what elements would make the rooms an ideal place.

Figure 9 shows the mechanism we developed to understand the users' needs and to co-create the transformation with them. As illustrated in this figure, in the research phase to design solutions and improvements, our teams applied different methods and used various tools based on empathy and interest.

We observed and recorded learning habits, organized co-creative workshops, made photographic records, conducted surveys in the reading rooms, interviews, etc. The objective was to identify what people did or what they wanted to do and could not do. We had flip charts with questions such as: what could be improved in this space?, what don't you like about this space?, would you benefit from studying at individual tables?, would you benefit from studying in group rooms?, among others.

At different times of the day, photographs were taken in strategic spaces to record their activities. Meetings were held with extreme users, members of the community of different ages, roles and disciplines. Discussion groups, coffees, small meetings, focus groups and workshops were organized to co-create and represent their needs and wishes. All these activities took place at different times and many at the same time.

Figure 9. SIBUCA Libraries Transformation



Source: Own elaboration.

The analysis of the results showed that current user behaviors are associated with digital skills and changes in information media and formats, technologies, socialization and entertainment. In general, academic libraries are organized by type of user. From this research, we realized that we should organize spaces according to how people want to learn.

Based on the results, all the findings were conceptualized in order to turn them into insights. They were organized and classified in tables taking into account what should be kept and what should be changed. The insight "Ordering the physical space by type of use and not by role in the university maximizes the user experience and favors integration" was chosen to be transferred to the intervention project.

Next, the following phases of the methodology were worked on, such as ideation, prototyping and implementation. Among the changes introduced were the integration of a wide variety of tables, chairs and armchairs, fitness areas with stationary bicycles, cafeteria area, lounge and SUM areas with technological equipment, blackboards and blackboard walls, electronic whiteboards and televisions, among others

(<https://biblioteca.uca.edu.ar/espacios.html>).

Satisfaction tests showed excellent results in terms of acceptance and comfort. Users took ownership of the place, changing and adapting the spaces according to their interests and activities.

Final Reflections

One of the starting points to consolidate the transformation of libraries is to understand the library as the space on campus where students have the responsibility and control of their learning. This means that they must transform their spaces into learning spaces where the library is part of the teaching process. To achieve this, it is essential that the library staff be involved in the mission of the university.

In this sense, it is fundamental to consider the user not only as a learner but also as a creator, and this implies the definition of a new concept of user. The trend of learning through experimentation rather than through the consumption of content transforms libraries into environments that will prioritize creation over study and reflection. Technology will play a key role, and, in fact, we already find in libraries laboratories for creation that include multimedia artifacts, virtual reality, 3D printers and others. A clear example is the Oodi Central Library in Helsinki, Finland.

Andy Priestner, in *User Experience in Libraries: Yearbook 2024*, states that librarians spend 70% of their time talking about users, but only the remaining 30% talking to them or involving them in their improvement or design processes⁵. This situation, in addition to affecting the relationship, leads the effort of libraries to investments that are unnecessary or disjointed from the needs of their communities. This is a reality that must be reversed if we want to achieve a management focused on people that responds to their requirements, solves their problems and ensures the conditions for teaching and learning.

On the other hand, it is crucial for libraries today to represent their organization and services by valuing the different ways of learning and planning strategies that allow them to strengthen the culture of innovation in their teams. Consequently, it will be essential for them to incorporate methodologies such as learning by doing to accelerate the modernization of work dynamics. This will only happen if leaders take responsibility for change management in the library.

Strengthening the skills of the teams oriented to cultural change will be key to facing these new challenges and opportunities. Understanding which profiles are indispensable to consolidate renewal plans will be the new challenge to which librarian training will have to commit in order for libraries to empathize and connect with users and among their teams.

Therefore, we need librarians who know how to listen actively to people without prejudices and who can develop curiosity and interest to investigate, find out, advance in what they need or want.

Finally, empowering change from the library as an agent of innovation in the university learning experience will consolidate its role in higher education.

Endnotes

¹ EDUCAUSE, *Horizon Report: Teaching and Learning Edition* (EDUCAUSE, 2020), https://library.educause.edu/-/media/files/library/2020/3/2020_horizon_report_pdf.pdf

² Association of College and Research Libraries, Research Planning and Review Committee, "2020 Top Trends in Academic Libraries: a Review of the Trends and Issues Affecting Academic Libraries in Higher Education", *College & Research Libraries News* 81, no. 6 (2020): 270, <https://doi.org/10.5860/crln.81.6.270>

³ Ashley Karr, "UX Research vs. UX Design", *Interactions* 22, no. 6 (2015): 7, <https://doi.org/10.1145/2834964>

⁴ International Federation of Library Associations and Institutions, Library Buildings and Equipment Section, *Library Building Guidelines: Developments & Reflections* (K. G. Saur, 2007).

⁵ Andy Priestner and Marisa Martin eds., *User Experience in Libraries: Yearbook 2024* (UXLibs, 2024).

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