Participatory action research in learning commons design planning

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Abstract

Purpose – The purpose of this paper is to document the process the Auraria Library went through to plan research methods to produce information for their learning commons project.

Design/methodology/approach – The paper provides an overview and the results of one library's planning methods using user-centered and participatory action research (PAR) principles. It includes a literature review and data gathered from several information gathering sessions. It also discusses useful resources and ideologies found outside the field of library science, such as "placemaking" and the concept of "third place."

Findings – Adopting values that honor user-centered, evidence-based decision making is a change that must include the whole library, as well as its users. When enough time is spent to include a broad spectrum of feedback you can get a lot of valuable evidence, even during a planning period.

Originality/value – The paper could be useful to libraries who are examining their services, environment, and technology. It is of interest to libraries that want to use user-centered design and PAR in their work.

Keywords Action research, Academic libraries, Library services, Learning, United States of America

Introduction

The Auraria Library serves three institutions of higher education, the Community College of Denver (CCD), Metropolitan State College of Denver (MSCD) (a four-year undergraduate institution), and the University of Colorado Denver (UCD) which has graduate and undergraduate programs. The population of students is close to 40,000 and almost entirely commuters. The CCD has been federally designated as a Hispanic Serving Institution, which requires 25 percent of the student population to be Hispanic and MSCD is on the way to receiving this designation also, according their web sites[1,2]. According to the official web site of the Auraria Higher Education Center over 80 percent of the students hold jobs, the average age for students ranges from 27 to 29 and "students range in age from 16 to 80, and include a significant minority population[3]. Many hold full time jobs and may be married with children." The library must respond to a student population which is urban, commuter, and often pulled in different directions by family and work.

In the spring of 2008, the Auraria Library worked on a strategic plan. The report that was finished in May of 2008 discussed the trends in library facilities, including learning commons. The first priority set in this report was as follows.

Strategic priority 1. With the promise of a new library building at least a decade in the future, optimize effective use of current facilities through strategic/systematic space planning activities.

Goal 1.1: Conduct a feasibility study:

- *Action.* Conduct user surveys and analyze usage statistics to identify/prioritize functions/services.

- *Action.* Pair these with library vision statement/strategic plan.

This led to the creation of a learning spaces committee to investigate what a learning commons could mean in this environment. As the library serves an unusually diverse student body, the library's learning spaces committee, worked to identify specialized needs and design with these in mind. The Committee has also worked creatively with a relatively limited budget. Members of the committee believe that their techniques for determining and meeting needs could help guide other libraries with similarly diverse populations and modern budgetary constraints. Harloe and Williams' (2009) definition of the learning commons fit the library's goals well:

> [...] library space devoted to dealing with what we might call the "critical literacies" (information literacy, visual literacy, reading, and writing in both print and digital forms) and less space devoted to the storage of print collections.

This project's design was inspired by student-centered research studies such as the Rochester study (Foster and Gibbons, 2007), Auraria Library director Mary Somerville's forthcoming book *Working Together* (Somerville, 2009), and the Carleton College study, "Curricular uses of visual materials: a mixed-method institutional study" (Nixon *et al.*, 2008) The learning space committee decided that changes would not be authentic and user-centered if data was not gathered directly from and with students, even though this involves following ethical guidelines and human subject/ethics procedures for three institutions, which adds tremendously to the timeline. The committee also decided that it was important for as many library staff as possible to be involved in this process so that the process could contribute to the professional development of the staff and the staff would feel a larger sense of ownership of the project.

The building itself, which opened in 1976, played a major role in learning commons' design. Architect Helmut Jahn won an award from the Chicago chapter of the American Institute of Architects for its design. More recently, the Denver Chapter of the American Institute of Architects has awarded the Auraria Library this year's 25 year award[4]. This award is bestowed each year on a building or public place that exemplifies design excellence over the past 25 years. It is a building with two courtyards and has many windows, which take advantage of natural light. The first floor has many tall bookshelves, which work against much of the beauty of the building. During the strategic planning process, it was decided that the first floor will be developed as a learning commons and a concurrent project was started to open up space on the first floor.

Beagle's writing on learning commons design helped guide Auraria's committee. In his paper "From information commons to learning commons," he states that a learning

commons should encompass "far-reaching change" so that in the process of change the library has:

> [...] altered its pattern of service delivery to better align itself with changing campus-wide priorities, and has done so by integrating those functions formerly carried out within the library with others formerly carried out beyond the library's purview. The service profile is no longer library centric, and becomes essentially collaborative (Beagle, 2004).

In order to make these "far-reaching changes" that Beagle mentions, the committee created strategies for the redesign based on a combination of user-centered design principles and a participatory action research (PAR) approach. Inquiry focused on two main questions:

Q1. What type of physical environment, technology, and services are needed to support and enhance the learning and research experience of the Auraria Library community?

Q2. How could the committee involve stakeholders (primarily students, academic faculty, and other librarians and library staff) in formulating a response?

Literature review and definitions

In order to ensure significant stakeholder participation, research methods were based on the concepts of PAR. Several recent books provide detailed definitions of PAR, as well as background on the method. The many detailed definitions boil down to explain that what makes PAR special is that the subjects of the study perform some of the research themselves. Thus, they are referred to as "participants" (McIntyre, 2008). Studies can be designed so that people of virtually any age and level of ability can function as participants. For example, at the time her book was published, researcher McIntyre was guiding nine- and ten-year-old Latina participants to explore "what it means for them to be girls" (McIntyre, 2008). Those who oversee the studies are referred to as "researchers" (McIntyre, 2008).

Another key element is PAR's cyclical nature. Rather than working along a straight path toward a goal, researchers, and participants work through repetitive stages of "exploration, knowledge construction, and action at different moments throughout the research process" (McIntyre, 2008).

PAR is an adaptation of "action research." Reason and Bradbury (2008) note that action research resulted from social science research that took place toward the end of Second World War. It has been continuously shaped by social science research throughout the decades, including work on "civil rights and anti-racism movements, feminism, community development, and so on."

Reason and Bradbury's (2008) list of description of action research deserves attention. The list is as follows. Action research:

- is a set of practices that responds to people's desire to act creatively in the face of practical and often pressing issues in their lives in organizations and communities;
- calls for engagement with people in collaborative relationships, opening new 'communicative spaces' in which dialogue and development can flourish;

- draws on many ways of knowing, both in the evidence that is generated in inquiry and its expression in diverse forms of presentation as well share learning with wider audiences;
- is values oriented, seeking to address issues of significance concerning the flourishing of human persons, their communities, and the wider ecology in which we participate; and
- is a living, emergent process that cannot be predetermined but changes and develops as those engaged deepen their understanding of the issues to be addressed and develop their capacity as co-inquirers both individually and collectively.

PAR in libraries

PAR is gaining popularity in the library community. Many recent researchers still refer to the method simply as "action research." For this literature review, the researchers looked into the methodology used in each study. When a method was described only as "action research" but met the guidelines for PAR, they decided to use these. School and public libraries serve as the settings for the bulk of PAR.

Libraries, particularly those in K-12 schools, frequently use PAR to help uncover the needs of groups with special challenges. For example, Kwok (2009) and her librarian colleagues have used it to help determine how an elementary school library could better assist males with attention deficit disorder, and male "reluctant readers" to enjoy reading. She cites numerous related studies that use PAR.

Bell's (2007) work centers on a project in which both Master of Library Science (MLS) candidates and high school students at a rural, low-income school in South Africa served as participants, in different ways. The MLS students assessed the high school students' information needs on a wide variety of topics, from careers to AIDS. The high school students discussed their own needs for knowledge, and took part in many interviews and tutoring or discussion sessions. This study is somewhat unusual in that it does not focus directly on technological knowledge.

PAR in design

PAR has not been discussed widely as a method for influencing building design, at least in scholarly literature. Interestingly, many of the papers that approach this topic most closely discuss landscape architecture, frequently in urban settings. A number of the design papers that discuss PAR focus on helping members of marginalized populations participate in the design of the places they will receive education, and, in a few cases, play.

Juarez and Brown (2008) experimented with the participation of landscape architecture students in planning many features in the city of El Monte, a Los Angeles suburb. Plagued by crime and graffiti, the city in general was not a welcoming place. The researchers and their students explored various ways in which low-income members of the city's Latino population could participate in planning. They learned about citizens' concerns, as well as interesting ways in which the concerns affected their lives (such as frustration over needing ugly security bars over home windows). Eventually, citizens and students together planned and executed a variety of projects.

Swann (2002) discusses the history of PAR in industrial design, as well as the adaptation of these methods into architectural design. He notes that, at the time he was

writing his paper (published in 2002), "few will genuinely include the users, consumers, and the public into the circle of participants, although this is beginning to occur." This may account for the lack of discussion of PAR in architectural design in current literature.

There is a small but engaging body of literature on PAR in playground design. While not directly relevant to learning commons research, it does approach similar topics of education and play. Though participants may be very young (or participant groups may use a combination of children and parents), the tactics are interesting. The basic question of many playground PAR project is, "how can participants help create a space that's both fun and educational," which relates strongly to our research. Some useful tactics used by a school in County Durham, UK, included researchers walking around the current playground, asking students to point out their favourite and least-favourite features (Green Places, 2008). The next stage of research involved asking students to work together to design a better playground. Features from this imagined playground were built from safe but temporary materials, and students played on them to see whether the features were as enjoyable as they had imagined (Green Places, 2008). While this certainly took money and time, the results were positive. Teachers reported that students seemed satisfied not only with the new playground, but with the emotions and preferences adults had encouraged them to express during the design process (Green Places, 2008).

Learning commons
Recent library literature covers best practices and popular services for learning commons in great detail. Interestingly, while some works discuss the "knowledge commons" as a step beyond the "information commons," others use the terms almost interchangeably. For example, most of the concepts covered in Beagle's *Information Commons Handbook* are widely accepted in learning commons literature as well (Beagle, 2006). A few authors, such as Bennett (2008), focus on the differences; but overall, distinctions seem to be minor. Even the American Library Association's book on the topic blurs most lines (Bailey and Tierney, 2006).

Learning commons design is a popular topic in recent journal literature. Most papers such as that from Twait (2009) discuss how student input was gathered, and the features that were decided upon. In Twait's case, at Gustavus Adolphus College, student feedback reflected the feedback noted in many other papers. For example, the current library had unpleasant fluorescent lighting (Twait, 2009), and the study areas were not the best. Librarians and staff gathered feedback on how to make the library a more attractive area, primarily for study and research.

Franks and Tosko (2007) effectively discuss the importance of the library on an ethnically and economically diverse campus, the University of Akron (UA). Like the Auraria Campus, UA offers open admissions and remedial courses, and has a high proportion of commuter students. Interestingly, Franks and Tosko (2007) noted that, "most students, regardless of skill level but because of their generational preferences, desire library space and services well outside traditional models." The paper discusses the need for informational, technological, and study skills-related aid on campus, including in the library. As the Auraria Campus also has an older-than-average student body, these insights will be wise to keep in mind.

Several libraries have prepared and shared overviews of research on learning commons design. Freund and Seale of the University of Florida toured numerous

modern learning commons while preparing to remodel their own. They then performed focus groups and gave surveys to help focus their plans on their own users' needs. The final list of user priorities is as follows (Freund and Seale, 2007):

- desire for more work space;
- the need for a mix of individualized and group work space;
- easier printing;
- comfort;
- friendlier signage; less restrictive language (do not start every sign with "NO");
- knowledgeable assistance available 24/7;
- approachable, friendly staff at the information desks; and
- coffee.

Gibson and Lockaby (2007) of George Mason University discuss another library renovation. They discuss modern students' wishes for a combination of learning commons-style spaces, with technology and space for collaboration, and a "traditional" portion of the library with books and little noise. They also discuss the importance of the library both as a physical place to work and access materials, and to discover materials that may be online or at other locations.

Ritchie and Ray (2008) of American University of Sharjah, United Arab Emirates, cover another important aspect of this planning: the incorporation of information literacy into the design of a learning commons. The plan led the authors to create a detailed philosophy for the learning commons' design. It led to incorporation of many of the factors important to these authors: planning to handle a wide variety of curricula, providing as much relevant technology as possible, creating a wide variety of individual and group spaces, and more.

Placemaking and the "third place"
The concept of library as a "third place" and the concept of "placemaking," proved interesting and influential to the researchers. The idea of "third place" was developed by Ray Oldenburg. This is explained on his web site (project for public places, available at: www.pps.org/) as follows:

> In his book *The Great Good Place*, Oldenburg (1991) demonstrates why these gathering places are essential to community and public life. He argues that bars, coffee shops, general stores, and other "third places" (in contrast to the first and second places of home and work), are central to local democracy and community vitality. By exploring how these places work and what roles they serve, Oldenburg offers placemaking tools and insight for individuals and communities everywhere[5].

This web site has a wealth of information regarding how to revitalize public places. In "What makes a successful place?[6]" four criteria are suggested as the markers of a successful public place. They are:

(1) *Access and linkage*. The ease with which one can get to the place and to other places from the place.

(2) *Uses and activities*. There also must be several different things to do. People need a reason to be there and to return.

(3) *Sociability*. Do people know each? Do they feel comfortable striking up new acquaintances in this environment?

(4) *Comfort and image*. This involves perceptions about safety, cleanliness, and different types of seating choices and activities.

On the site "placemaking Chicago"[7], there are:

[...] steps PPS recommends for assessing and then doing something about the public spaces in your neighborhood. The steps include not only how to get started, but also *how to move through a Placemaking process* [...]

This follows the process for cyclical research in PAR, which will be discussed later in this paper. There are as follows:

Getting ready:

Step 1. Assess public space challenges.

Step 2. Select a site.

Step 3. Identify key stakeholders.

Evaluating your neighbourhood:

Step 4. Collect data.

Making a place plan:

Step 5. Conduct place evaluation workshop.

Step 6. Translate the ideas into action with a working group.

Step 7. Develop a visual concept plan.

Step 8. Create a summary report and presentation.

Implementing your place plan:

Step 9. Implement short-term actions.

Step 10. Develop long-term design and management plans.

Step 11. Assess results and replicate.

Papers discussing academic libraries as "third places" do not often use that term to describe their research. Rather, they tend to focus on more specific aspects of students' library experiences. One paper that does broadly discuss the academic library as a third place can be found online at the site of the North Suburban Library Systems in Illinois, titled "Creating a Third Place from a Diverse Academic Community" (Larson, 2007; www.nsls.info/articles/detail.aspx?articleID=117). It is written by Betsy Larson of the University Center of Lake County. She states that the University Center building:

[...] is arranged to facilitate formal teaching and informal learning. Clusters (termed "academic houses" by the architects) of classrooms, conference rooms, and alcoves with upholstered furniture allow the learning to extend from the traditional classroom into comfortable breakout spaces. The first floor atrium area includes lounge-chair seating and small group tables beside the three-story windows facing onto the courtyard; our café is here

also, featuring homemade soups, sandwiches, desserts, and coffees. This area of the building is often buzzing with activity as students and faculty arrive before classes for a snack and meetings and hums again later during break times. Students also make use of the many alcove seating areas around the building to meet colleagues or study before classes. Other students and faculty make the climb up to the third floor to use our library.

Auraria's strategies

Auraria's librarians recognized that higher education is undergoing major changes, both in terms of student demographics and of teaching methods. Supporting these changes became a major goal in their plans, and gathering data helped best shape these plans. Fortunately, some current research conducted at other libraries provided partial guidance. Recently in Library Journal the architect Sens (2009), in his paper "Twelve keys to library design: improving the academic experience," gave his first three keys:

(1) *Create a sense of space*. Today's libraries serve multiple roles on college campuses. Each comes with its own design opportunities: first, design spaces that promote group study and collaboration, which is critical to student success, then provide individual, quiet, contemplative spaces that blend the formal and informal to suit the divergent learning styles of each individual. To achieve this goal, the learning spaces committee chose to focus on creating specialty spaces including cafes, lounges, and meeting places for student activities.

(2) *Invite students to the table (and we would argue other stakeholders as well)*. Capturing the student perspective is critical in planning a successful library. Encourage students to participate in town hall-style meetings, focus groups, and advisory councils, or engage a student representative to join the planning committee in order to fully grasp student needs and expectations and what they would like to experience as end-users. Bring into the discussion other end-user groups such as faculty, library staff, and IT personnel who can share their perspectives for a fuller understanding of how the library is to be designed.

(3) *Design for collaboration*. Collaboration has changed nearly every facet of pedagogy and therefore every aspect of design. Students are encouraged to discover and share knowledge with other students while professors assist in this collaborative discovery process. The pedagogical paradigm has shifted from a "sage on the stage" to a "guide on the side." This new approach to learning and teaching requires spaces that promote group interaction and discussion. Consider breakout areas, group study rooms, and videoconferencing spots, to allow for the healthy cross-fertilization of ideas.

This research emphasizes that pedagogy is changing, specifically in the area of collaboration and our learning spaces need to reflect that, but we need to find out in what ways Auraria's spaces can change to accommodate and support this trend. In addition it guides the committee to think about "library as place" and making it a successful public place takes planning, as outlined in literature and processes developed by the Project for Public Spaces. In the paper "Eleven principles for creating great community places")[8] the first principle is "The community is the expert." This supported the practice of recruiting stakeholders as participants in PAR.

Planning the research

After reviewing literature and trends, the committee felt drawn to several concepts:

- Developing a do-it-yourself strategy of training and teaching the library faculty and staff about user-centered design, action research and data gathering so that they can undertake continuous evaluation of services.
- Implementing a user-centered participatory approach to decision-making and planning for the learning commons.
- Immersing the faculty and staff in the research planning and execution so that their input and expertise continues to be well utilized.

Do-it-yourself strategy

In order to achieve the first goal, the library's leadership team brought in a consultant, Erika Rogers, who specializes in user-centered design, particularly for librarians. In a two-week program entitled "Empowering librarians through user-centered design," she gave five hands-on workshops, training librarians in a variety of qualitative data collection techniques, PAR approaches and data analysis methods. Informational presentations opened and closed the program. In addition, throughout the two-week period, she also met and collaborated with various library committees, individual library faculty and staff, and institutional human subjects committee members to help consolidate and refine the library's overall research plan.

All members of the library were invited to take part in the process. Many of the sessions focused on documenting what changes the library staff wanted to see and what type of information they wanted to gather. This information was documented and analyzed. Table AI in Appendix 1 shows the results of a session devoted to developing a wish list for the project.

The researchers devoted time to developing a list of stakeholders, putting them into categories and then used the list to compare which research projects and ultimate inclusions in the learning commons would appeal to each type. The first group, "decision makers," included the library's and college's administration, regents, and donors. The term "researchers" referred to librarians and library staff and "end users" to refer to library users. It was important to find projects, equipment or services that would appeal to each one of them. Table AIII in Appendix 3 the researchers fleshed out some possibilities for research projects. We wanted to have various types of data so we addressed the type of data we would gather for each project. Some principles to be kept in mind throughout the process were:

(1) Check each wish list item against:
   - the mission of the library and each institution; and
   - the perceptions of the "decision makers" category of stakeholders.
(2) Organize into "immediate priority" and "the tomorrow file."
   Consider whether it is the library's mission to actually provide a particular service/technology OR a container/space for that service/technology to be made available.
(3) Consider having a smaller number of things (services, technologies, equipment, etc.) and have them working well, reliably and sustainably rather than a lot of new bells and whistles that cannot be maintained with the current level of staffing.

Implementation of user-centered participatory approach
As an outcome of the two-week program, the committee developed several potential user-centered and PAR approaches which could contribute to project success:

(1) Recruitment of participants for projects:

- Include outsiders in project committees, etc. Student services, each school, students, etc. Provide leadership training or opportunity for students, etc. internship/business.
- Have instructors communicate what we are doing with projects, recruit from classes for projects.
- Communicate that we are looking for student projects and class participation. List kept up/contact person. Publicize outcomes of student project on the library web site.
- Attend faculty departmental meetings. Use outreach librarians for contacts.
- Utilize the library advisory board.
- Look at attending faculty and student orientations. New employee orientations. International student orientations.
- Spring fling/student festival-try to have a table at such outdoor events.

(2) Librarians need a "strategy and analysis room" (also known as PAR laboratory or studio) where working projects and data can be displayed and developed. Someplace that is ONLY for the librarian staff working on projects (or wishing to be informed about projects) – no public or student worker access. This could also be a working room for having PAR participants help with analysis. Need: plenty of open wall space to post large pieces of paper (floor plan feedback, personas, etc.), book case to hold stacks of data to be analyzed (printouts of comments), large container of colored highlighter pens, conference table, and chairs.

(3) Develop library "Personas." The concept of "Personas" refers to the identification of specific types of users, for example users with young children or users who have just graduated from high school, and develop an example of the users with a name and specific attributes. This might help to put a face on the library's users. Using personas is one way to consolidate user data in order to test hypotheses and "run" scenarios. To begin, the researchers could use information we were already gathering, then build up with the new knowledge –, e.g. look at the comments existing data from campus studies.

(4) Service desk journals. Blank journals would be placed at the service desks. People working at the desk would jot down observations and users comments. This information would be documented and analyzed.

Utilizing and supporting faculty/staff expertise
Collection and consolidation of all the different feedback opportunities you already have. For example:

- chat reference messages;
- comments on WorldCat; and

- In reply to:nstructor feedback (from librarian info classes) – use these surveys to gather additional info (demographics (optional), a question or two on the LC) – then separate these responses and give to appropriate team for analysis.

After the intense two week planning period the Committee continued planning activities by producing the chart (Table AIV) in Appendix 4 ("low-hanging fruit") which evaluated services that could be offered in the "sandbox project" by cost, student appeal, feasibility speed, and faculty appeal. The "sandbox" project was developed as an area for using a main principle of PAR which is the research process cycle. The parts of the cycle are:

- plan;
- action;
- observe;
- reflect; and
- revise plan.

It is a continual experimental process.

Methods

The researchers used the information gathered to shape the final research plan. Some ideas were rejected because of the lack of connection with the strategic plan or mission, lack of staff time or resources, etc. These projects connect back to Sens' (2009) the three principles, discussed earlier in the paper. The information gathered will provide information to create a sense of space and design for collaboration by providing feedback about furniture, services, and group study spaces. It will invite the students to the table by collaborating with them on the redesign of the first floor of the library and getting their feedback through surveys in person and online. The learning spaces committee, with participation from many other library employees, will document the data received and produce a report to the shared leadership committee at the library. This information will be use to develop a more detailed plan for more complete and far-reaching changes to the learning commons space. It will also be used to support fund raising efforts.

Survey/questionnaire/group study project
Description. A library employee may visit groups of students and/or faculty who have scheduled time in group study rooms. Groups studying in other areas of the library, the student union and computer labs may also be approached. The groups will be informed that the survey is voluntary. A set list of questions will shape the interview. Two library employees will conduct the surveys. One will serve as the interviewer and the other as the recorder. Alternatively or additionally an online survey will be directly toward users who make reservations for group study areas.

Type of data expected. Verbal responses to semi-structured survey which will be recorded by the recorder in notes written by hand or typed into a computer. Responses gathered by an online survey tool.

Architecture/physical environment feedback project
Description. As a result of our outreach efforts the University of Colorado College of Architecture and Planning decided to offer a studio course focused on the redesign

of the first floor of the library. This will be a midlevel course taken mostly by second year student in which they design a part of a building. It will be taught by a working architect. Data gathered from other projects will be shared with professor and students from this class. This will create a living laboratory where the ideas come directly from library users. After the class produces renderings and/or models, these will be displayed in the library for feedback which will be documented.

Web poll
Description. In order to reach the users who do not usually come into the library, the committee decided that a poll asking one question per week would be gather the most responses. The poll will appear for a total of eight weeks. The survey will be linked from the library homepage, using an online survey tool.

Sandbox project
Description. The name "sandbox" was used as a working title. It came out of the term as it is used in software development. Wikipedia defines it as:

> [...] a testing environment that isolates untested code changes and outright experimentation from the production environment or repository, in the context of software development including Web development and revision control, and by extension in web-based editing environments including wikis"[9].

The committee will change the name in the future to be more informative to users.

The sandbox will function as a play/practice area where we can try out new services, equipment, furniture, and technology and observe if and how these things are used. Things to offer in this area first may be:

(1) technology help desk;
(2) new software for video editing with appropriate supporting technology;
(3) collaborative technology/work areas;
(4) new and different furniture; and
(5) periodicals browsing area.

The use of this area will be observed and documented. The technology help desk was put forward because of the large amount of technology-related questions that the reference desk receives. Video editing is intended to help students and faculty integrate audio and video into their class projects. Collaborative technology and work spaces responds to many requests we get for more group areas and because of the many groups we see working together all over the library. The library's furniture has not been updated significantly since the library was opened and is in bad condition, but we do not know what sort of furniture is desired by users. The furniture observation should address this. Other ideas which were popular but ran into problems in execution at this time were a children's reading area near adult work areas – because of the large amount of children who come to the library with their parents, and writing and tutoring areas.

Service desk journals
Description. We will place journals at the service desks. The employees working at these desks will jot down any services, technology, suggestions that they hear from users.

Future projects
All of the projects, except for the architecture/physical environment feedback project, will be concluded, and data collected and preserved by 31 January 2010. The committee will then endeavor to interpret the data by including a broad cross section of library users, students and faculty if possible. A report will be issued to the library administration.

Conclusion

Many libraries want their environment and offerings to evolve simultaneously with new academic goals, curriculum design and technology/communication patterns. Each library, however, must shape its actions toward its own populations and needs. No library can use any other library's plans without adaptation. The researchers do not want to automatically duplicate the learning commons' in other libraries. Rather, they want to gather information from and with our users so that we may give them the amenities, atmosphere, and tools they need. Librarians aim to enrich and disseminate information, and to make accessing and using it easier. There are new ways in which people study, communicate, use technology, and complete assignments. Some old practices create barriers to new patterns; libraries need to continually develop new paths for this information to flow from our control to the control of their users. This is the challenge. This is not about building an environment which looks like what most people call a "learning commons." It is about becoming more critical in the quest to move beyond a "learning commons," to a more fundamental goal of making the Auraria Library a successful place, physically and virtually. With that goal in mind, designers of learning commons need to examine not only library science concepts but extend their scope to include ideas found in other disciplines, or in the needs of users and the institution. They need to employ user-centered research devices such as PAR and placemaking to uncover the patterns and help us address the impediments to information use and transfer.

At the time of this paper's publication, the Auraria Library's learning commons had already seen numerous changes. The public service areas (reference, circulation, interlibrary loan (ILL), reserves, and tech help) had undergone changes in physical layout. Services had been redistributed amongst the relevant desks. New technologies had been added to the learning commons' offerings. The learning spaces committee was busy reviewing feedback from students, academic faculty, and library employees in preparation for making future changes. Additional technologies, upgrades to facilities and furniture, and eateries were under consideration. Ongoing change and reflection, cycled over and over, were major themes for the committee.

Notes

1. MSCD 2008-2009 Fact Sheet available at: www.mscd.edu/news/media/fact/index.shtml (accessed November 8, 2009).

2. CCD Key College Data available at: www.ccd.edu/InstitutionalAdvancement/Key-College-Data.aspx (accessed November 8, 2009).

3. Auraria Higher Education Center Statistics available at: www.ahec.edu/statistics/statistics.htm (accessed November 8, 2009).

4. The American Institute of Architects (Denver) Recognizes 2009 Achievements in Architecture available at: http://b76ee10b57134367ebd46545bd5d972cbf6f36d1.gripelements.com/09_aia_denver_awards_nr.pdf (accessed November 8, 2009).

5. Ray Oldenburg available at: www.pps.org/info/placemakingtools/placemakers/roldenburg (accessed November 8, 2009).

6. What makes a successful place available at: www.pps.org/topics/gps/gr_place_feat (accessed November 8, 2009).

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Appendix 1

Physical areas	New – LC Wishlist	Virtual areas	New – LC Wishlist
Circulation	Writing center	Web site	Changes to computer configuration
Reference/information	Physical access to media center	Auraria catalog	Other digital learning objects
	Better group study	WorldCat?	Institutional repository
Student assistant	Audition/presentations rooms	Interactive virtual reference help	
Reserves	Technology enhanced group rooms	Course and subject guides	
ILL	Technology check out	Tutorials	
Media services	Children's space		
Research instruction services	New hardware		
Assistive technology lab	Apple computers for sandbox		
Copy center	Outlets, laptop support		
Group study rooms	Update existing technology		
Courtyards	Quick email/schedule kiosk		
Printing area	Circulation self-check kiosk		
Archives	Digital signage		
	Café/eating areas		
	Lounging furniture		
	Improved courtyards sculpture/art		
	Tech help desk		
	Distance learning/video-conferencing		

Table AI.
List of current services and Wishlist for learning commons/documentation from work session

Appendix 2

Decision makers	Researchers	End users
Donors	Librarians	Students
UCD administration	Other library staff	Newbies
MSCD administration		English second language
CCD administration		First generation college students
The state		Over 50
The public		Graduate students
		Students from other schools?
		Parents with children
		Single parents w. children
		Faculty
		UCD
		MSCD
		CCD
		Part time and adjunct
		Other people
		Non-academic people

Table AII.
Stakeholders chart

Appendix 3

Project name	Type of participation	Proposed use of data
1. Floor plan project (Basquiat Graffiti wall?)		Improve services of the LC Decorative artwork displayed on walls Photos of results could be used in marketing/PR Journalistic papers w. photos Grant proposals for additional funding Published papers on LC experience and methodology
PAR1 – General patron input Hang floor plans and let students write comments/suggestions, etc. Add a list of "should have" services to the side of the floor plan with no spatial directions. Also include an electronic version of this on the web – pdfs only. These can be submitted electronically (if you create a form upload, you might be able to keep this anonymous) or drop into a suggestion box outposts in admin and faculty offices. Web version	Anonymous, serendipitous comments on the walls; electronic submission may have identity – check if students would like to be acknowledged	
PAR2 – Collaboration with architecture classes (a) Short-term – have them help with the sandbox (b) Longer-term design of the whole first floor (no holds barred) 2. Sandbox project UCD1 – Observation 3. Faculty/student seminar/group study rooms UCD2 – questionnaires	Classes are involved with faculty as part of their coursework student designers are given free range of the library, as well as copies of the PAR 1 data available	
	Give questionnaire to faculty/students who use seminar rooms – include checklists of all kinds of possible equipment (with short explanation if needed) and prioritize between "must-have" and "nice-to-have," also include an "other" category and allow for open-ended comments; also, ask if they're willing to participate in a longer interview on this subject – then include contact info	

Appendix 4

Things we want to see	Cost	Student appeal	Feasibility	Speed	Faculty appeal	Average
Nice place to eat	2	10	5	2	10	5.8
ATM machine	?	7	6	3	7	5.75
Gaming area	7	10	9	9	2	7.4
Small group study/work area/walls	2	8	4	4	8	5.2
Writing center	10	10	8	8	8	8.8
Computer help desk	6	9	9	7	5	7.2
Offices for adjunct faculty	2	1	4	4	10	4.2
Scanning and/or media editing	2	6	8	8	10	6.8
Quick e-mail check area	8	6	10	10	5	7.8
TV viewing	4	7	6	10	2	5.8
Digital signage	7	7	7	6	4	6.2
News area	7	2	7	7	3	5.2
Popular materials browsing area	9	4	8	8	4	6.6
Comfy furniture	2	9	9	8	8	7.2
Career counseling/advising/tutoring	10	2	4	5	7	5.6
Check out cameras, ipods, etc.	3	10	3	5	7	5
Expand laptop checkout	5	7	4	5	2	4
Stage	2	7	3	3	3	3.6
Open up MSCD access center (equip for disabled students) for everyone	9	5	5	6	7	6.4
More/family restrooms?	1	10	1	1	10	4.6
Popular videos	8	9	8	8	10	8.6

Notes: ? – cost unknown; rating goes from one (not attractive) to ten (very attractive)

Table AIV.
Low-hanging fruit chart