Collaborative design: a learner-centered library planning approach

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Abstract

Purpose – Information commons were introduced into libraries in the early 1990s. Now universities are building library learning commons and campus learning spaces. This paper sets out to present a participatory library (re)design approach for collaborative planning “for and with” faculty teachers, student learners, and campus stakeholders.

Design/methodology/approach – Collaborative design (co-design) employs user-centric investigations to produce products, applications, and environments aimed at advancing learning, sustaining communication, and building relationships. Examples from California Polytechnic State University and San José State University in California, USA, suggest the efficacy of this inclusive, learner-centered (re)design approach for library facilities, services, and systems.

Findings – Inviting and enabling user input from the start offers a fruitful planning approach in which campus librarians, stakeholders, and beneficiaries “learn their way” to appropriate library (re)design decisions. Also, user involvement in information gathering and interpretation activities initiates the interactive relationships necessary for continuous improvement.

Practical implications – Collaborative design (co-design) yields sustained interaction with user beneficiaries and campus stakeholders. It changes how library staff members think and what they think about, concurrent with enhancing libraries’ appeal and value.

Originality/value – In development since 2002, the highly participatory design approach reflects theoretical and applied insights from researchers in Europe, Australia, and North America who have worked with US library practitioners to develop user-centric processes for advancing organizational learning and enhancing user efficacy. Its practical application to planning for library learning commons and learning spaces contributes to the small but important literature on user-centered library (re)design.

Keywords Libraries, Learning, Design, Learning organizations

Paper type Research paper

Introduction

The rapid emergence of peer production, social networking, and powerful non-market actors via the internet and other technologies is reshaping not only the flow of commerce but also the means by which information and culture are created and shared between individuals, groups, and societies. Reflective of these changes, the generation that has grown up with the internet – referred to interchangeably as Millennials, the Net Generation, Generation Y, and the Digital Generation (Windham, 2005, 2006; Oblinger, 2003; Prensky, 2005) – create, distribute, share, and consume information in ways that challenge cherished higher education assumptions about learning (Brown, 2002; Prensky, 2007), including libraries’ traditional “warehouse of knowledge” role (Lippincott, 2005). In response, academic libraries are increasingly serving as providers
of space and resources that foster social interaction in physical and virtual learning environments. Realizing the potential of these ambitious new organizational opportunities requires reconsidering enshrined organizational planning models – including comfortable notions about appropriate relationships between librarians and users.

These reconsiderations occur within the larger context of changes within the North American higher education community where educators increasingly strive to create conditions for student learning that enhance both intellectual quality and coursework authenticity. In other words, they aim to provide learning experiences that are compelling, worthwhile, significant, and meaningful in the real world. This requires replacing traditional activities that depend on mastery of bits of information – quite possibly important information – that is forgotten because it is not applied to the solving of interesting problems or other concrete activities. In its place, classroom information and teaching practices move in the direction of the informal, multidimensional social settings in which people learn naturally (Oakes and Lipton, 2003). It quite naturally follows that co-curricular facilities such as library learning commons and learning spaces, which constitute the focus of this paper, should also enable quality user experiences.

The library offers an obvious venue where academic work can be conducted in a social context supported physically, intellectually, and remotely (McKinstry, 2008). As Scott Bennett has noted in *Libraries Designed for Learning*, library (re)design should not be dominated by information resources and their delivery. Rather, it should “incorporate a deeper understanding of the independent, active learning behavior of students and the teaching strategies of faculty meant to support those behaviors” (Bennett, 2003, p. 39). For instance, library (re)design must recognize that the Net Generation values engagement expressed through interactive teamwork. They appreciate technology for what it enables – customization, convenience, interaction, collaboration, experiencing, connectedness, and learning (Oblinger and Oblinger, 2005). From this perspective, learning is a remarkable social process which, in truth, occurs not as a response to teaching but rather as a result of a social framework that fosters learning (Brown and Duguid, 2000).

This recognition fueled a sense of urgency among San José State University planners as they prepared to redesign library space on a metropolitan campus in the heart of California’s Silicon Valley. As a consequence, they purposefully incorporated learner-centered social interactions into a library redesign process intended to insinuate librarians into students’ information finding, knowledge gathering, and content creating activities. Toward this end, they selected Web 2.0 tools for collaborative investigations with student and faculty beneficiaries.

San José State University planners also adopted a participatory design philosophy introduced at Luleå University of Technology (LTU) in Sweden in 2002 and imported to California Polytechnic State University (Cal Poly) in the USA in 2003. Between 2003 and 2006, Cal Poly researchers elaborated and refined the elements of a collaborative design (co-design) approach. Then, in 2007, San José planners adapted this participatory, user-centered, learning-focused approach to repurpose and remodel library facilities. Concurrently, they discovered how the library organization can better foster learning “with and for” student beneficiaries and faculty partners.
Progressive library commons evolution
In his definitive essay “Libraries designed for learning”, Yale University Librarian Emeritus Scott Bennett recalls the long heritage of common rooms in higher education, where all members of the academic community meet informally for dialogue and debate, especially after meals. Despite shared origins, significant differences now exist among commons initiatives, ranging from library information commons to library learning commons and, most recently, campus learning spaces. The early information commons construct only enabled knowledge seeking. In contrast, a learning commons has knowledge creation goals. As Bennett explains:

The core activity of a learning commons would not be the manipulation and mastery of information, as in an information commons, but the collaborative learning by which students turn information into knowledge and sometimes into wisdom. A learning commons would be built around the social dimensions of learning and knowledge and would be managed by students themselves for learning purposes that vary greatly and change frequently (Bennett, 2003, p. 38).

A learning commons brings people together, not around informally shared interests as happens in traditional common rooms, but around shared learning tasks, sometimes formalized in class assignments. The core activity of a learning commons is not the manipulation and mastery of information, as in an information commons, but the collaborative processes by which students turn information into knowledge through social interactions that engage and excite students' learning purposes.

Furthermore, according to Bennett, a learning commons must be owned by learners, not by teachers, whether faculty or librarians. A learning commons must be capable of accommodating frequently changing learning tasks that students define for themselves – "like an academic playground of sorts" (Bennett, 2005, p. 38), not information-management tasks defined and taught by library or academic computing staff. A learning commons would most likely also provide food service, maintaining the strong customary association of food with sociability and dialogue.

A complementary framework explains the evolution and elaboration of the commons concept in terms of institutional alignment, strategic fit, and functional integration (Beagle, 1999, 2002, 2004; Bailey and Tierney, 2002). These characteristics are useful in describing the change dynamics and service priorities that continue to push the evolution of information commons, learning commons, and learning spaces through strategic collaborations, professional retooling, planning processes, resource reallocation, service models, evaluation strategies, building design, and staff development (Somerville and Harlan, 2008).

The evolution from information commons to learning commons can also be understood in terms of a continuum: adjustment, isolated change, far reaching change, and transformation. In a paper titled “From information commons to learning commons”, Beagle offers a typology for distinguishing between information commons (IC) and learning commons (LC):

IC as adjustment: described as a computer lab on the first floor of the library with a suite of productivity software (MS Office) combined with access to electronic resources. Focus broadens from print to integration and coordination of information technology resources for students.
IC as isolated change: described as the same lab but with media authoring tools also included, and with coordinated in-library staff support designed to carry the user through a continuum
of service from resource identification and retrieval through data processing and format conversion to the desired end of presentation, packing, and publication. Here, the library has altered its pattern of service delivery to better align itself with changing campus-wide priorities, and has done so by integrating functions formerly carried out by separate units within the library to project a new service profile. This level portrays an IC model that is still library-centric, however. While it better aligns the library with other campus priorities, it is still not intrinsically collaborative with other campus initiatives (Beagle, 2004, p. 1).

At this point, Beagle marks the threshold between information commons and learning commons. In continuing, he says of learning commons (LC):

*LC as far-reaching change:* described as the above plus coordination with other unit(s) such as a faculty development center or center for teaching and learning, as well as the frequent inclusion of a campus-wide course management system meaningfully linked to and integrated with library electronic resources and virtual reference services. Here, the library has further 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 carried out beyond the library’s purview. The service profile is no longer library centric, and becomes essentially collaborative.

*LC as transformative change:* the above carried out with reference to (or within a framework of) campus-wide schema and/or faculty innovation such as core curriculum revision, writing/authoring across the curriculum, [and] cognitive immersion learning [...] At this level, we continue to see functional integration across a horizontal plane, but we begin to see vertical differentiation as the former service delivery profile projected toward students becomes enhanced with another (or multiple) service delivery profile(s) projected at the needs of faculty as course authors, knowledge creators, learning coaches, and scholarly communicators. This also involves an enriched suite of services and toolsets (Beagle, 2004, pp. 1-2).

Given this mandate, it is fitting that information commons and learning commons – and, most recently, learning spaces – have developed within libraries because “[T]he academic library as place holds a unique position on campus. No other building can so symbolically and physically represent the academic heart of an institution” (Freeman, 2005, p. 9). In keeping with its historic role as an institution of learning, culture, and intellectual community, a library location offers “a rich, comprehensive environment of print, electronic and human information resources” (Bennett, 2003, p. 39). Predictive of libraries’ potential contributions in today’s dynamic higher education environment, “In recent years we have reawakened to the fact that libraries are fundamentally about people – how they learn, how they use information, and how they participate in the life of a learning community” (Demas, 2005, p. 25). To realize this opportunity, libraries must move from information commons, which assist users in knowledge seeking to learning commons, which enable knowledge creation through cross-disciplinary, cross-campus, and cross-functional collaboration.

These cooperative endeavors can produce synergistic outcomes, as demonstrated in the Dalhousie Learning Commons collaboration with statistical computing consultants and geographic information system specialists. “The project sparked a unprecedented level of cooperation among university departments – facilities management, networks and systems, hardware services, and of course the libraries – because all understood the value of the new centre, not only to our students as a computing resource, but also
to the university itself” (Nikkel, 2003, p. 214). This project demonstrates the efficacy of local customization of the commons concept.

Similarly, at the University of Nevada, Las Vegas (UNLV) Library, a state-of-the-art building located in the literal center of campus and identified by campus leaders as its figurative “heart”, demonstrates another successful customization effort, in this case aligned with the UNLV library mission to “bring people and information together in innovative ways” (Starkweather and Marks, 2005, p. 22). Originally, the commons was a focal point of the building, physically located on the first floor. The spacious area included 12 built-in furniture pods of workstations that totaled 92 desktop computers, plus three scanners, and two large-scale study rooms. However, student demand soon prompted expanding service points and increasing enabling technology and productivity software throughout the library. “This dynamic interweaving of tools and services requires a constant rethinking and reorganization of ideas, methods, and space” (Church, 2005, p. 80), as planners seek “to evolve and assist in the process of turning information to knowledge to final product” (Church, 2005, p. 81).

Recognition that the learning process is simultaneously personal, social, situated and active has prompted the contemporary trend toward co-location and collaboration of complementary expertise in support of cooperative learning and group study (Lippincott, 2004). For instance, student expectations for enabling tools and staff assistance require new ways of combining information resources, technology consultation, and research assistance in physical and virtual learning environments. Within a library context, this anticipates significant changes in the ways that students use facilities, expertise, and resources – i.e. how to enable easy access to and use of “instruction, collaboration, informed research, relevant resources, critical analysis, and integrated results” (Wedge and Kearns, 2005, p. 1). This is made all the more difficult because delivery models must necessarily blend formal and informal modes of learning in (re)designed spaces that encourage student teamwork and social collaboration (Joint Information Systems Committee, 2006; Roberts, 2007).

As a consequence, information technologists, instructional designers, pedagogy experts, peer mentors, writing specialists, and other academic support personnel on many campuses now work together in integrated “circles of service” that permit new purposes within the library carried out with others formerly working beyond the library’s purview (Beagle, 2004). These new campus partnerships align well with the shift in higher education from a focus on teaching to an emphasis on learning. In addition, as California Polytechnic State University collaborators demonstrated, enriching student learning experiences can also explicitly advance library workplace learning when purposeful organizational leadership is paired with intentional staff development (e.g. Somerville et al., 2005a, b; Davis and Somerville, 2006; Somerville et al., 2006).

Given the potentially far-reaching implications of redesigning and repurposing space in academic libraries, attention is now turning to creation of learning spaces which leverage Web 2.0 technologies to create a “Commons 2.0” (Sinclair, 2007) environment that fosters student learning in new and creative ways throughout the campus environment. In acknowledging the essential social dimension of knowledge and learning, this third iteration of the commons concept encourages the facilitation of formal and informal social exchanges in campus venues such as dining halls, residence halls, reading rooms, scientific laboratories, and university bookstores. Grounded in
the recognition that learning occurs when information is transformed into knowledge by some person or group of persons, even classrooms are being redesigned as learning spaces that encourage and enable interaction (Oblinger, 2005). Concurrently, professors are adopting pedagogy that provides students with knowledge production experiences transferable to lifelong learning (Somerville, 2007b).

These efforts provoke reconsideration of the fundamental educational mission of the university. In the case of libraries, the question becomes: just what does the library contribute to student learning? It follows that building redesigns must be informed not by traditional library service operations logic, but rather by insight into how students learn and faculty teach. Contemporary planners of commons and other learning spaces must therefore purposefully engage learners to produce user-centered, insight-driven designs.

**User-centered design tenets**

Around the globe, facilities planners are becoming increasingly mindful of students’ learning preferences and expectations as they (re)design libraries. Often, project outcome goals emerge from formal student surveys and other learner studies (Mountfield, 2005). Periodic post-implementation surveys then determine whether student characteristics and preferences continue to correspond to pre-implementation predictions and measures (Gardner and Eng, 2005). These efforts predict the importance of establishing sustainable relationships that ensure the nimble responsiveness made possible by the ongoing communication expected in the interaction age (Milne, 2007).

In the spirit of enabling continuous participatory design activities, university researchers in Sweden, Australia, and the USA collaborated from 2002 to 2006 on identifying replicable approaches for better aligning university library workplace outcomes with contemporary students’ changing learning patterns. The seven professors possessed expertise in social informatics, human-computer interaction, new media, information science, and knowledge management. They consulted with library practitioners at three public institutions of higher education in two continents to develop an approach for harvesting and applying user-generated “evidence” (Somerville et al., 2007, Somerville and Brar, n.d.) for planning and evaluating “knowledge making” (Gillette and Somerville, 2006; Somerville and Gillette, 2008) initiatives grounded in social information exchange and located in library facilities.

Implemented collaboratively with present and potential user communities, the resulting (re)design approach aims to move organizational focus beyond “library centric” thinking that only advances librarians’ points of view on “what is best for users”. Learner-centered and highly interactive, collaborative design is both a philosophy and a process in which the needs, wants and limitations of end users play a central role at each stage of the design process. Related methodologies include:

- *cooperative design*, the Scandinavian tradition that equitably involves designers and users;
- *participatory design*, a North American version of the above; and
- *contextual design*, a method that approaches product design out of an understanding of how customers work.
While quantitative methods are sometimes included in these approaches, a key feature of all these design methodologies is the integral and extensive use of qualitative data collection and analysis methodologies – open-ended interviews, focus groups, ethnographic studies, and participant observation. Another defining characteristic is the emphasis on iterative design, often leading to rapid prototyping of solutions which can, in turn, be evaluated, modified, and, finally, implemented in a relatively short time frame, while incorporating user feedback throughout.

Co-design’s action research orientation also aims to bring about change in the project situation (the action) while learning (Checkland and Poulter, 2006) from the process of deriving the change (the research) (Checkland and Holwell, 1998). At Cal Poly, for instance, the emphasis on inquiry-based learning, as well as attention to participation and involvement, intended to intrinsically and simultaneously guide librarians’ reconsideration of organizational purpose(s), concurrent with reinventing constituency relationships and workplace roles. These enterprise-level thinking experiences fostered “big picture”/meta appreciation of the larger academic enterprise (Somerville and Mirijamdotter, 2005; Somerville et al., 2006) among both student and librarian participants, even as it provided particular student-generated insights into learning commons features and functionalities.

Given multiple anticipated outcomes, the usage of qualitative research methodologies offers a number of important benefits. First, data collection and interpretation requires sustained face-to-face communication between university librarians and student researchers. The resulting conversation offers librarians valuable insights into users’ perspectives through authentic “voiced” exchanges. These exchanges also offer opportunities for clarification and aid interpretation, unlike the “cut and dry” style of reductive numeric data reports. In addition, when relationships with research participants continue, longitudinal studies can be conducted on particularly perplexing problems. Over time, this authentic, textured evidence can cultivate a research-in-practice culture that incrementally improves user experiences through problem solutions, service improvements, and organizational changes. At the same time, continuing inquiry-based collaborative (re)design relationships also promote the perpetual learning that fuels robust information exchange within the library and with the campus community.

Co-design development phase
The co-design approach was developed and evaluated through an 18-month study involving librarians, students, and professors at California Polytechnic State University (Cal Poly) who received pro bono consultation and coaching from Australian and Swedish researchers with expertise in social informatics, information literacy, and systems science. Newly renovated space on the second floor of the campus library served as both the site for the applied research project and also its subject matter. The results revealed the importance of involving users in establishing the concept for a commons.

The founding Learning Commons Partners consisted of ten library leaders, information technologists, and pedagogy experts who forged a partnership to repurpose library space. They agreed that student success could best be advanced through support of faculty teaching innovations. Therefore, they established a twofold purpose for the Cal Poly learning commons:
(1) provide technological infrastructure, pedagogy and technology expertise, and information resources and consultation to enable faculty innovation and curriculum revitalization; and

(2) encourage application of constructivist principles to advance students’ information, communication, and technology proficiencies for lifelong learning.

After the Cal Poly learning commons opened, students supervised by faculty sponsors initiated research projects. Student researchers invited their student peers to provide learner data that explored such questions as:

(1) How do students study/learn? How do they solve problems?
(2) How do students use technology and share information?
(3) How do students produce content and “make knowledge”?

Supervised by faculty members with expertise in computer science, knowledge management, technical writing, architectural design, and new media, students generated research questions, selected research methodologies, and interpreted research data. Student-generated results contrasted sharply with founders’ concepts – i.e. they recommended extending the purpose of the commons to:

- promote cross-disciplinary inquiry and discourse; and
- create an inclusive, interactive learning community (Somerville, 2007a).

In presenting their ideas to learning commons planners and explicitly “linking the commons to learning” (Lippincott, 2006a, b) rather than teaching, students also emphasized that their social networking and knowledge production practices required that other academic service providers were co-located in the commons. They requested writing center experts, study skills specialists, and software training consultants. This co-location, cooperation, and collaboration advice considerably enlarged the “service circle” originally envisioned by the learning commons planning team.

Students also recommended a virtual (Mirijamdotter et al., 2006) as well as a physical commons. For example, students in software engineering and artificial intelligence courses responded to student generated needs assessment findings and created prototype learning spaces and learning tools for the Cal Poly learning commons using 3D-modeling techniques. Then they conducted user studies employing focus groups, online surveys, and usability experiments. Their applied research projects explored many learner-centered virtual enhancements to the original teacher-focused design concept, including virtual collaboration rooms, a senior project marketplace, a multimedia café, and a campus knowledge repository. Students’ ideas stimulated planners’ reconsideration of their original design assumptions and underscored the importance of heightened “boundary crossing” collaboration.

Another significant difference in planner perspectives and student viewpoints involved the matter of formal and informal learning spaces. While the founding planners had focused primarily on advancing students’ formal learning activities, students recommended blending formal and informal learning experiences. This notion placed libraries in the role of bridging the gap between the more formalized classrooms and the informal domain of personal learning (McKinstry, 2008). Students’ multimedia café proposal, for instance, included relaxing leisure and gaming
opportunities in close proximity to sophisticated multimedia production and editing facilities. Students derived other “best practices” from industry standards set by Starbucks coffee houses and Borders/Barnes and Noble bookstores, which seamlessly blend wireless network access and print resource browsing with food, drink, and conversation – further challenging planners’ original design concept.

In these Cal Poly co-design projects, students worked in teams supervised by faculty sponsors. In keeping with the “learn by doing” educational philosophy of the university, course projects involved students in applying user-centric research methodologies to identify learning commons enhancements. In order for planners to benefit from student outcomes, data collection and interpretation activities required considerable face-to-face communication. These clarifying conversations offered valuable insights into user perspectives, additional to expanding planners’ research-in-practice competencies. Librarians were especially appreciative of the relationships with the students, which often continued, as it permitted in-depth insight into users’ perspectives on a wide range of organizational issues. This collaborative, participatory design approach (co-design) naturally encouraged continuous library organization improvement, in the spirit of action research, even as it fostered sustainable relationships with members of diverse academic user communities. Ongoing conversations continue library-wide rethinking and re-designing among an increasingly broad spectrum of campus beneficiaries and stakeholders.

San José co-design implementation
Inclusive participatory principles and practices now inform facilities redesign activities in the Dr Martin Luther King Jr Library at San José State University in California, USA. Four years after opening this award winning library facility in 2003 (Berry, 2004), library leaders now aim to further its founding learning philosophy (Peterson, 2005) by “re-inventing” library spaces. Two co-design projects are advancing concurrently. One redesign initiative aims to support students’ informal, (co-curricular) learning in a learning commons. A second redesign project aims to transform library instruction classrooms into collaborative learning spaces. While the first initiative relies on student-generated evidence and the second depends primarily on faculty-generated insights, both projects are learner-centered.

Together, these highly complementary initiatives aim to advance the library’s founding commitment to build community and promote learning among library staff and with library users. In addition, the San José co-design initiative strives to both build on Cal Poly’s successful outcomes and also benefit from Cal Poly’s “lessons learned”. And, within the framework of Beagle’s learning commons continuum, San José planners seek to produce “transformative change” – and thereby extend Cal Poly’s “far-reaching change”.

San José planners intend to achieve their ambitious goals through purposefully broadening the range of constituencies who are consulted from the outset of the planning process. Concurrent with ensuring collaborative determination of purpose(s), library facility (re)designers aim to establish sustainable information sharing relationships fortified by both physical face-to-face meetings supplemented by virtual technology-mediated exchanges. Therefore, in order to ensure “voiced” guidance from project inception which is reflective of campus composition, the planning team includes a wide range of campus beneficiaries and stakeholders.
instructional design consultants, academic technology leaders, campus facilities managers, student government representatives, student peer mentors, faculty senate advisers, and university outreach librarians. In addition, to advance the adoption of a research-in-practice workplace culture, regular forums in library meeting rooms inform and involve all interested campus community members. Discussion outcomes are reported and advanced through web-based blog and wiki forums additional to regular campus communication channels.

Technology tool readiness
Given the library’s location in California’s Silicon Valley – the worldwide headquarters for Adobe Systems, eBay, Cisco Systems, Apple Computers, Yahoo!, and Google, a Learning 2.0 educational program was initiated in December 2006 to enable organizational members' readiness to communicate with Net Gen learners using Web 2.0 tools. Developed by Helene Blowers, Public Services Technology Director at the Public Library of Charlotte and Mecklenburg County (PLCMC), Learning 2.0 prepared librarians, paraprofessionals, and administrators to explore web-based technologies. Completion of the online program’s “23 things”, a subset of Stephen Abram’s “43 things I might want to do this year” (Abram, 2006), offered practical, hands-on experience with the tools and technologies that are changing the way people, libraries, and society access information and communicate with each other.

Over 100 library staff members completed the online course, which provided hands-on experience using Web 2.0 social networking and peer production tools found freely available on the internet and in common use by today’s university students, including:

- **blogs** – an easy-to-use website, where users can quickly post thoughts and interact with people – similar to a log, journal, or online diary;
- **wikis** – a collaborative website creation and authoring tool that allows users to easily add, remove and edit website content;
- **tagging** – an open and informal method of categorizing that allows users to associate keywords or “tags” with online content – i.e. unlike traditional library subject cataloging, which follows a strict set of guidelines for categorization, tagging is completely unstructured and freeform, allowing users to create personally meaningful connections between data; and
- **Flickr** – an online photo sharing community that uses “tags” or keywords to help identify and search for photos.

Since April 2007 when the Learning 2.0 initiative concluded, library employees have practiced using these Web 2.0 tools in organizational strategic planning activities (Kendall et al., 2008). This practical experience advanced their technology proficiencies. It also readied them for new relationship building opportunities with student and faculty constituencies.

Student-generated research
To involve students in library space redesign, space planners invited students to complete an EDUCAUSE Learning Initiative (ELI) Student Input on Learning Spaces Tool. EDUCAUSE is a non-profit educational association which strives to advance higher education by promoting appropriate use of information technology. The ELI
instrument offered a way to obtain creative user input for planning and designing a physical library learning commons. In addition, planners sought to explore how they might apply Learning 2.0-enabled web capabilities to co-create robust virtual “knowledge making” places and spaces “for and with” users. Toward this end, students representative of campus demographics were invited to complete a learning spaces survey. This required using a 24-exposure disposable camera to photograph locations identified in the learning space survey to designate, for instance, favorite places for group work.

In organizing the data for analysis, academic librarians, campus technologists, and instructional designers used Flickr visual tagging software, one of the “23 things” in Learning 2.0. This permitted sorting students’ least favorite and most favorite campus places by different demographic variables, such as academic majors or class rankings. Then, to ensure authentic interpretation, other students were asked to interpret their peers’ responses. The resulting dialogue advanced co-learning, as students and planners worked together to discuss, debate, and clarify insights on the narrative data and digital images. During the process, library redesign planners experienced the efficacy of authentic learning activities – in which students applied critical thinking and information interpretation skills to voice their peers’ perspectives. In addition, the dialogue-intensive sessions yielded valuable insights into learners’ priorities:

- open, unconfined environment;
- comfortable, reconfigurable furniture;
- functional, inspiring space; and
- ubiquitous mobile technology.

The conversations begun during face-to-face interpretation of survey research data now occur virtually, as library space planners employ Web 2.0 social networking tools to continue student engagement in planning activities.

Faculty-generated research
Concurrently, library space planners conducted a study of university faculty to collect professors’ advice on redesigning library classroom facilities. To ensure faculty participation in the study and “ownership” of the results, librarians gained the endorsement of the Academic Senate’s University Library Board. San Jose State University’s Curriculum and Research Committee members, who represent all campus colleges, served as research subjects. Employing a qualitative interview methodology to explore how professors experience, perceive, understand, and conceptualize information literacy and technology fluency, this investigatory approach derived from the work of Bruce (1997), who studied Australian higher educators’ conceptions of information literacy. A decade later, in 2005, the methodology was imported to the USA for implementation at California Polytechnic State University to explore undergraduate college students’ conceptions of information literacy (Maybee, 2006). Concurrently, in the UK, Webber et al. (2005) studied academic faculty members’ conceptions of information literacy.

The San José study modified Webber and Johnston’s open-ended research questions to reveal professors’ notions about changing competencies for information literate graduates within the context of changing disciplinary pedagogical practices and in the light of workplace technology requirements (Somerville et al., 2008). The study
therefore elicited both reflection on aspirations and also description of constraints. The interviews were recorded and transcribed and, following this, transcripts were analyzed. Preliminary insights were then shared with members on the sponsoring University Library Board. This served both to enhance collegial ownership of the results and also encourage continued consultation on library redesign.

As faculty members dialogued, they identified the following statements from interview transcripts as being particularly germane to reconsidering librarians’ roles in renovated library classrooms (Feind, 2007):

I haven’t or wouldn’t use the term “information literacy”. But in the field of information systems, the core question for the whole discipline in which I teach is: how do you manage data and how do you convert data into information?

I want more of the learning to come from people interacting. And that’s because “knowledge of the masses” is far greater than “knowledge from individuals”. That’s how the stock market works [...] The same thing is starting to apply to information sources. That’s why I love wikis more than blogs.

Understanding context is very important. For example, if students were to show that they understood how to communicate using video, I would have them create a video “pitching” themselves or “pitching” an idea, within a workplace context as close as possible to “real world” circumstances.

One assignment requires that students use social bookmarking to find twelve online sites and compare them (qualitatively) to library print and electronic resources. [...] I require that students complete annotations in a del.icio.us account. Then I organize students into groups of two or three where they discuss one another’s relevancy criteria and then rate those evaluative elements. Next individuals have to decide, based on their group discussion, which six factors to consider in selecting resources for their culminating course research paper.

I have students go back and forth between the extraction of information and the presentation of information. In both cases, it’s about how you transmit information from one individual to another. In one case, the student – the receiver – has to understand the structure of the format and logic of the argument in order to understand the information. In another case, as the constructor, s/he has to communicate accurately and effectively through applying the same communication principles.

Workplace requirements are rapidly changing. Information literacy and technology fluency skills for graduates must be understood in the light of what companies now expect from entry-level employees.

This year I am asking students to blog about their information sources. They will choose an information technology industry and they will track its changes, mindful of who is reporting what and when. In addition, I will require students to interact on a wiki where they will collaboratively revise one another’s papers.

I assign students to listen to podcasts from the Wall Street Journal. The speakers are opinionated. It’s more like a radio show than an investigatory journalism approach to contemporary issues. [...] I think that universities run the risk of becoming less and less relevant if they don’t embrace Web 2.0 tools.

We need to develop shared vocabulary and shared vision about information literacy on this campus. [...] [Toward that end] I have always thought that partnerships between teaching faculty and library faculty were critical.
As the interview excerpts illustrate, university professors are acknowledging students’ participatory and collaborative learning style preferences. They are employing Web 2.0 social networking, information exchange, and knowledge creation tools to achieve formal student learning outcomes. It follows then that librarians must also reinvent their curriculum-aligned learning activities. Toward that end, informed by ELI student results, space planners are now remodeling library classrooms to enable more interactive, collaborative pedagogical approaches.

**Learner-centered results**

In reinventing their teaching styles within reinvented “classrooms designed for learning” (Long and Ehrmann, 2005), librarians prepare to further their capabilities to co-investigate with teaching faculty, student learners, and other campus academic support professionals. A variety of co-design research methods are suitable for this purpose, including but not limited to focus groups, usability studies, and Web-based user surveys. In addition, Web 2.0 collaboration tools provide means for continuous interaction with users and, in the spirit of action research, nimble responsiveness from planners.

**Conclusions**

Since its inception at the University of Southern California in the mid-1990s, the commons concept of providing a space for students to gather and work with technology has evolved for over a decade. Establishing these areas has allowed many university libraries to remain relevant in the academic lives of students. Over a decade later, the most successful projects reflect customization of the commons concept, which must continue to adapt and evolve appropriate to particular campus circumstances in order to meet changing expectations and harness technological advances. Within this framework, the co-design approach offers defining elements:

- a *process* – user-centric, interdisciplinary, continuous investigations;
- an *outcome* – usable products, applications, environments; and
- a *philosophy* – learning focused and relationship building (Somerville and Brar, 2006, 2007).

Furthermore, collaborative design embodies an inherent action research orientation which assumes that sustained interaction with beneficiaries and stakeholders changes how participants think and what they think about. This in turn impacts what they do, informed by perpetual face-to-face and virtual communications and supplementary user-centered research studies.

This inherent learning orientation is particularly conducive to designing and developing learning environments collaboratively. As demonstrated by the promise of Cal Poly and San José results, library learning commons and learning space planners should seize the opportunity to invite and enable broad based input into (re)design decisions from the start, so as to guarantee the furtherance of libraries’ appeal and value on campus. The resulting “organic and iterative” (Johnson and Lomas, 2005) conversations can inform (re)consideration of physical facilities, virtual environments, learning outcomes and assessments, and instructional events. Over time, dialogue-based relationships with campus constituencies can even yield transforming insights into organizational purposes, library missions, service models,
and professional imperatives (Somerville and Nino, 2007) through information interactions that can produce knowledge and sometimes wisdom.

References


Prensky, M. (2007), “To educate, we must listen: reflections from traveling the world”, available at: www.marcprensky.com/writing/Prensky-To_Educate_We_Must_Listen.pdf


Further reading


About the authors
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