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By the close of the twentieth century, there was no question that the higher education sector, would be subject to the disruption and dislocation being generated by the digital revolution. A set of institutions formed by the industrial revolution would either have to undergo fundamental realignment or become marginal as the digital revolution unfolded. There were and are, of course, questions as to the time frame for the impact to be felt, and there were and are great differences of opinion among sector leaders as to what it might ultimately mean.

Estimating the time frame for the digital transformation involves predictions about the future and such predictions are as likely to be wrong as they are to be hard to define and verify. No matter how much change occurs, some lagging elements will always remain as our life amidst remnants of earlier ages attests. The industrial revolution itself, and the accompanying scientific revolutions, took centuries (Stearns, 2012) with some elements still being implemented even within higher education. My own sense of how things are likely to unfold is somewhat more of a hunch than an estimate, so I consider it only a starting point.

Is there anything on the horizon that might support a similar transformation of higher education in the coming decades? Something that would transform the methods, and perhaps the location, of production? Something that would dramatically reduce the cost? Something that would set the stage for the global delivery of higher education to all of humanity? Something that would move us beyond the handcrafted education offered in individual classrooms at educational institutions throughout the world? Something that would extend learning opportunities to all those kept outside the gated, tuition dependent institutions of higher education we have come to accept as necessary?

I am going to suggest that we explore these issues examining the current operation of higher education, the current goals, and look carefully at what has
The Unfinished Agenda

happened and is happening as we continue to move into the digital era. There are a number of clues as to the future if only we can bring ourselves to see them. Some of these clues are to be found among the stresses and strains of the sector as it currently operates. Others will be found in developments in other areas outside of higher education. I will frame the discussion here in terms of the three current areas in which institutions of higher education aim to operate – teaching, research, and service. For each of these areas I will consider the issues internal to the sector, forces building outside the sector, and, for good measure, I will recount our work in the EdLab that attempted to prepare one institution to lead by example instead of being the object of the coming wave.

Teaching

Inside Higher Education

Teaching, generally organized via courses, majors, and programs, is the mainstay of virtually all institutions of higher education. There have been a variety of attempts to update and rethink teaching. In the eighties and nineties there seemed to be a transition from notes on aging yellow pads to presentations using PowerPoint. Such presentations are now broadly used and accepted, and a variety of other technological bells and whistles have been brought into the mix. Perhaps in hopes of the power of suggestion, these have included “Smart Boards” (Riyaz, 2010) and devices to encourage engagement such as clickers and other student response systems (Nielsen, Hansen, & Stav, 2013). The flipped classroom has even attempted to turn teaching on its head by having students review material online and then work collaboratively in class (Wozny, Balser, & Ives, 2018).

The problem is not in the techniques that dominate teaching, the problem is the fundamental arrangements by which teaching is structured, legitimated, and sustained. Institutions of higher education are still operating under an early industrial model of production with craft workers (faculty) working within increasingly bureaucratized organizations. The labor-intensive model of production is under increasing strain as the cost of labor rises and with it the cost of tuition, which in turn generates calls for greater accountability, which in turn cause institutions to double down on traditional and new forms of assessment of performance of teachers, students, and programs. The response of the higher education sector seems to be a turn to lower cost contingent labor (adjuncts) coupled with the use of increasing technology.

The very odd thing about the use of technology within higher education is the degree to which it is applied to reinforce the industrial era bureaucratic model. It is no accident that the primary technology within higher education is the LMS, the learning “management” system. This interest in “managing” learning is more advanced in some institutions than others with some reinforcing standardization of teaching, curriculum, learning, and assessment, and others only
going so far as to pre-position high level administrators ready to execute the full force of the industrial model of teaching and learning just as soon as existing faculty will allow. Higher education institutions appear to be riding the banking notion of education to the bank.

From the perspective of the higher education labor force, the full-time faculty, and the growing proportion of part-time adjuncts, current developments within institutions of higher education represent not so much the transition to a new digital age but rather the final build out of the industrial model rooted in digital Taylorism (Au, 2011) that enhances the standardization and inspection of teaching and learning by forcing teachers to surrender the choice of their own tools via the forced adoption of institutional applications and platforms, often as noted earlier, provided by outside companies in exchange for data on students and faculty.

The seemingly unceasing growth of assessment processes are a key part of this final stage of industrialization. The assessment processes growing in legitimacy within the higher education sector lead to enhanced inspection and standardization. These approaches permit less in the way of creativity, and they inevitably focus on facts that are increasingly easy to find rather than processes and human interactions which are both more important and more challenging to assess within the framework of the industrial model.

The course as a model of education delivery is itself decidedly industrial in its configuration. It is the specification of what is to be learned in advance of assembling the group of learners. It pays only lip service to what the group might bring to the learning tasks.

**General Societal Factors**

As we continue on the transition from the end of the industrial age to a new digital age characterized by advances in computing and communications that will increasingly become pervasive on a global basis, the conditions for learning are changing in fundamental ways. Already we are witnessing the rise of networks and platforms that can carry materials of an increasingly sophisticated nature to virtually anyone. Because these organizational forms are inherently scalable, they can offer learning opportunities at low or no cost. Already individuals around the world can take advantage of a variety of platforms to access knowledge on a just-in-time basis, including, for example, Coursera, Udemy, YouTube, and edX.

A key to this digital transformation is the engagement of unparalleled numbers of individuals in the creation of knowledge products and associated learning opportunities. Despite initial skepticism rooted in industrial age notions of quality assurance and inspection, the growth of resources on various platforms has demonstrated the potential to equal and then surpass educational entities operating on the industrial model (Reagle, 2010).
The new digital platforms have the advantage of leveraging a global supply of human labor that can contribute to the production of learning resources. Because the dominant higher education model is unable to scale and enhance quality simultaneously, it will be eclipsed in quality and efficiency and hence affordability by the new digital platforms.

The new learning landscape has advantages for the expansion of learning opportunities beyond the quality and efficiency dimensions. The current configuration of higher education institutions operates on the principle of scarcity and status attainment both as it manages access through testing and admissions requirements and as it seeks donors who aspire to enhance the standing of one institution relative to others. Unfortunately, the institutions at the top are also those most wedded to the past in many cases. The small number of institutions at the top of the institutional status hierarchy attempt to reinforce and extend their positions, but in so doing they fail to extend learning opportunities through their core business model of campus-based courses reliant on expensive human labor. It should be noted that a small number of institutions have experimented with alternatives such as MOOC platforms, and such experiments do show promise, but it is not yet clear that such platforms will be permitted to succeed at the expense of the old industrial era model. And, of course, there is the tragic irony that the platforms have retained the course delivery model. Then, of course, we still rate automobile engines in terms of horse power, as if anyone was left who actually understood what that meant.

As we shift to the post-industrial era, industrial-era schooling will be replaced by self-directed learning, most likely starting with professional education where it will be driven by the work environment in new enterprises. This will be more affordable as we begin to reduce the human costs of staffing higher education and come to rely more on learners to work with a new set of digital and interactive resources to secure their own learning either directly or by tapping into a global community of expertise. The new self-directed learning landscape will improve over time even as the old labor-intensive model continues to deteriorate. As this happens, learning opportunities will become more ubiquitous and less institutionally bound. Much of the learning in the digital era will be just-in-time, not just-in-case. The banking notion of education will give way to a learning ecosystem that supports individuals at the time of need. Institutionally based, mass production of so-so standard outcomes is terribly inefficient and increasingly cost prohibitive. It will be replaced by a more agile learning ecology that can flex as needed.

**EdLab Contribution**

To me, there seemed to be evidence all around us that our major sources of revenue would likely decline at an increasing rate over the next 50 years. Tuition-paying students would soon have access to whatever professional education they might want and need from a global supply of online resources in various forms, only a
few of which resembled the assemblages we called courses and programs (Torpey & Drake, 2019). The improvement of these digital alternatives would accelerate over time if they simply followed the path of other digital components while our own offerings would struggle to improve or even to hold their own amidst tightening budgets. Nothing in my years at the library where we had a broad view of instructional offerings at the college had revealed anything that could be improved and scaled to meet the demands of the new digital ecosystem. In fact, the college continued to double-down on improving the old model, a noble, heroic, and ultimately self-defeating strategy. How could it do anything else?

The traditional take on how colleges and universities might prevail in the new digital era included heightening the value of the individual faculty at a particular campus. Although there is much that I find attractive about this romantic notion, it is just that, a romantic notion that will soon give way as the result of two forces, one external and one internal. The external force is the power of global digital networks to flatten access to all faculty anywhere, thereby consigning local “stars” to the same fate as local newspapers. The internal force is the increasing digital “inspection” and “design assistance” promulgated by institution after institution that effectively runs faculty teaching through the homogenizing forces of learning management systems and institutional tools. These forces might signal some good things for the global digital learning ecosystem, particularly if the products are open to external networks, but they will signal the decline of individual institutions as global stars outgrow their home institutions and locals fold into the long-tail.

At the EdLab we developed a strategy to thrive in the evolving digital learning environment. We called this strategy “avoiding the middle,” and we oriented our work accordingly. The “middle” entailed those activities that required a middle level of investment with little notable impact on learning, little or no short-term return, and long-term disaster. However, this “middle” is where just about every higher education administrator feels compelled to lead us and where most faculty feel appreciated. As a result, the instinct on local campuses is almost always to do the wrong thing. Our EdLab strategy to avoid the middle was either to invest in low-cost, scalable activities through the development of minimally viable products or to go for the high end by investing in high effort initiatives with the potential to have distinctively high impact.

At the EdLab we worked on a number of projects designed to capture the low end of low-cost scalable learning opportunities. But our efforts evolved to be much more than the individual projects and products. Institutions in all sectors of society are in the process of learning the hard way that failing to control the platform on which your products are distributed is a losing strategy. As Foroohar (2019) and others have observed, platform owners like Google, Facebook, and Amazon enjoy unparalleled information advantages when it comes to distribution and pricing, and they are always a threat to both own the platform and use it to distribute their own products, and thus out compete everyone else. This
is precisely what Google has been charged with in the E.U. (Scott, 2017), and higher education is not exempt from this phenomenon.

The EdLab initiative to develop a distribution platform for the professional education of educators was an attempt to spare Teachers College the pain of ending up a loser on someone else’s platform. Of course, various efforts to use Apple U, Facebook, and YouTube and later Coursera and edX to display its wares only threatened to accelerate the process. The outcome is not in doubt; only the timeline remains to be determined. The question remains as to whether and how Teachers College, an institution launched in the midst of the industrial revolution, would be able to reconfigure itself for the fast-emerging digital era.

The EdLab projects to develop an ecosystem for education (the EdLab Account, Vialogues, Rhizr, PocketKnowledge), was an attempt to engage audiences for the professional education of educators beyond the immediate enrollees of the college. The 100,000-plus users of these systems generated no immediate revenue for the college, but they served as a test bed and proof of concept of the ability of a single institution with limited technical and financial means to reach for platform status. Moreover, our approach allowed us to accomplish this within the existing library budget as a result of achieving internal efficiencies.

In addition to working hard on the low end with low-cost scalable efforts, we worked equally hard on the high or couture end of things. Unfortunately, these efforts also proved difficult to integrate and institutionalize within the context of the college. The best example of where education needs to go, at least institutionally based education, is the EdLab itself. The EdLab was a model of an operating unit that tried to accomplish substantial work in the education sector and bring students into the workplace to participate in a variety of modes from full employment to part-time employment to internship activities and even more broadly through intent participation (Rogoff, Paradise, Arauz, Correa-Chavez, & Angelillo, 2003). The EdLab was such a unit engaged in production/operations for the field of education – and there might be corresponding production sites in many other fields.

In some sense the project-based work site as a learning site is what faculty research projects offer students preparing to become researchers, but research careers are only a small part of what the university prepares students to do, Imagine an educational institution where operational units dominate as the modal form of learning opportunities, with courses (now glorified collections of Coursera/Edx modules) called up by students as needed. The transition from institutions dominated by courses and degrees to work sites with roles defined to accelerate learning should be relatively easy but for the psychological change necessary to get everyone to view such an arrangement as legitimate. We evaluate and certify course performance, and we use it to apportion status and rewards, but the learning that is associated with courses is necessarily limited and narrow compared to what can be learned outside of courses.
A comprehensive experience rooted in authentic project-based learning would be a foundation for a life of self-directed learning and the development of more integrated individuals experiencing a more artistic and less technocratic experience. Beyond these educational benefits that will be increasingly important in the new digital era, there is another benefit: it is difficult to turn such experiences and the institutions that house them into commodities readily available for much lower cost on the global internet. Instead of attempting to differentiate themselves through an administratively driven layer of promotional activities that place a veneer over their increasingly commoditized course offerings, colleges and universities could invest in a new generation of authentic learning experiences. Such prospects are intriguing, but our attempt to communicate such potential by modeling it at the EdLab fell short.

Research

*Inside Higher Education*

If, as I just suggested, research projects offer the kind of real-world learning opportunities that carry unique value beyond the immediate reach of the digital forces that are commoditizing courses and degree programs, then it stands to reason that such research activities might be the new foundation of unique offerings for colleges and universities in the digital age, at least for those institutions such as research universities where research is a major component, occupying a good deal of faculty and administrator time and energy. Indeed, the opportunity for students to participate in research is an attraction touted by many institutions of higher education, and for many prospective students, research is a draw. Moreover, research has been an important budget component for some research universities, and such institutions capitalize further on this source of revenue by using employment in funded research as an experience for students.

There are, however, limitations of research as a foundation for institutions of higher education. These limitations include the fact that many students have little or no interest in research careers and the fact that many institutions, outside of the major research universities, lack faculty who are themselves interested in and prepared for research careers. The higher education sector is large and diverse, and research-oriented institutions represent only a small proportion. The research university was the innovation launched at the close of the nineteenth century, and it has served well since then, but it is unlikely to be the model for the future.

There are financial limitations to research for sustaining even those institutions that are research oriented. Although externally sponsored research activities can be a major component of institutional budgets, the contribution is often misunderstood. Funded research at most covers the direct costs of research activities and a portion of overhead, and a good bit of externally funded research covers less than this. Of course, this means that the net proceeds from research activities represent
a loss, covered by revenue from other activities, typically teaching. Externally supported projects are often announced as additive by institutions of higher education, and they are just that, additions to a base funded by student tuition.

The dilemma posed by research for institutions is that it is often highly valued by faculty who view it as what in many cases it is, the only activity that allows them to build a career and gain both internal and external recognition and reward. This means that institutions embrace research to retain faculty and build their own reputations. Incidentally, the embrace of research can be even stronger for institutions with less accomplished faculty in this area than by those at the top because aggregate research productivity is a means to improve institutional standing.

The other dilemma posed by externally funded research is that it captures a fair amount of faculty time and energy, leaving less of both for other responsibilities within institutions, such as teaching and advising students. This is the kind of problem I posed in an earlier chapter when I discussed research centers and institutes as the location of innovations that seemed not to permeate the rest of the institution. Indeed, in their near total isolation from the main business of the institutions in which they are located, university-based research centers and institutes have achieved conditions favorable for short-term success, perhaps at the cost of the longer-term sustainability of the larger institution.

If research within institutions of higher education is not the solution to preparing for a digital future, it is not going anywhere, at least in some institutions, which makes rethinking ways to incorporate tuition generating student learning experiences into research sites particularly important. Of course, this would require the kind of re-imagination of teaching and learning as we noted in the discussion of teaching, and in most cases, it would require re-imagining the research center or lab. And, of course, moving in this direction would create the dilemma of sacrificing the independence of the research enterprise to the needs of tuition paying students, and other institutional priorities.

As currently organized in small, often individually driven teams, externally funded research is akin to the spinning wheels of pre-industrial cloth production and likely unable to scale to meet even the needs of the entire tuition-paying student bodies within institutions. There is little internal pressure to make research activities more efficient, and there may well be incentives for them to remain labor intensive when a secondary goal is creating employment and financial support for students. Institutions invest resources to manage externally funded research, but little in improving the actual conditions for the work itself, save those driven by regulation.

**General Societal Factors**

The challenges of supporting research within institutions of higher education remain for all but the most elite and well-resourced, but there are also forces outside of colleges and universities that are reshaping research opportunities within
them. Many of these forces impact even the institutions most renowned for research. These forces include the loss of unique status as sources of knowledge, a new more competitive landscape, and the coming transformation of research.

The higher education sector has some unique advantages on the research front, chief among them the perception of being unbiased in the conduct of research and the sharing of results and conclusions. At the very least, there is the perception that research conducted in colleges and university settings is unaffected by political and financial considerations.

This very feature of university-based research that makes it unique, its independence and perceived lack of bias, has been eroded over the past several decades. This erosion has come from multiple quarters and shows no sign of abating. External sponsors are increasingly oriented toward agenda-driven inquiry and less likely to fund basic science or social science research, including research in education. Instead, government sponsors are more likely to fund work that informs their politically driven policy agenda. Even with changes in governing party, the research portfolio shows no signs of shifting away from one point of view or another. In addition, a new generation of foundations has embraced agenda-driven work, often with a clear assessment component oriented to return on investment with the return calculated in terms of advancing the agenda (Callahan, 2018; Feuer, 2016).

An additional factor leading to the erosion of the isolation of university-based research from broader commercial concerns has been the activities set in motion by the Bayh-Dole Act, which relaxed the wall between universities conducting research and corporations using the results (Rafferty, 2008). Far from guarding the buffer against commercial interests overtaking the more basic search for knowledge, the Bayh-Dole Act has provided both permission and incentives for universities to spin off the results of their research and at times to capitalize on any financial gains. I will leave for others consideration of whether this is ultimately good for research or for society at large, but whatever the case, lowering the wall between research and commercial interests has served to erode the special status of university research. To the degree that universities attempt to play politics and even just to release results that are substantive, they can be compromised.

The erosion of unique status as authoritative, unbiased, creators of knowledge together with the rise of a host of other research organizations and the general proliferation of research activities throughout society has led to a new more active and expansive research environment in which university research must compete. Not only are organizations that specialize in one area of research or another growing, but they are able to focus and devote attention to make their research very high quality. As these organizations grow in size, they also set the groundwork to respond more quickly and scale resources to whatever the external sponsor intends. Because they are not educational institutions conducting research, but are research institutions, they can invest in ways that make the research enterprise both higher quality and more efficient.
More generally outside of the higher education sector, research is becoming a more common activity. Indeed, as explained in Chapter 14, it is increasingly possible to embed data gathering, analysis, reporting, and even application of results into regular functions, for example, in educational applications and systems. While this trend does much to generate demand for those with research design skills, it also hastens the decline of the unique position of universities as purveyors of research.

This does not mean that universities will lose research as a core activity, at least in the major research institutions, but it does mean that the role of universities as sources of authoritative knowledge is declining. One has only to look at the highly politicized media sources growing up around us to understand that universities are in decline as the final arbiters of knowledge. The decline of the unique position of universities as centers of research will also be under pressure as new generations of researchers find more attractive research career opportunities in other sectors, particularly those with access to large data sets and tool sets. If institutions of higher education do not reinvent themselves for the new knowledge ecosystem, the future is not promising for university research.

A third threat to university-based research lies in the coming automation and scaling of research activities. Virtually all phases of research activity, including problem formation, hypothesis generation, data gathering, data processing, analysis, reporting, and alterations in policy and practice, are susceptible to automation, scaling, and access to a global network of expertise. As this happens, the university research model that relies on individual faculty and available low-cost student labor with little incentive to reduce costs will become less competitive. Much like home-loomed cloth, there will remain a role for research conducted at institutions of higher education, but the niche will become smaller with time.

**EdLab Contribution**

If the challenge for instructional offerings was most evident, the coming challenge for our advantages in research activities would surely be as severe. Like the faculty at most research universities, our faculty would be certain that their ability to conduct research would see them and the institution through whatever other challenges might confront us on the tuition front, ignoring the fact that external support of research was designed and intended just to cover costs. More troubling was the fact that educational and social science research was entering a period of major change that would move research from a specialized domain of scholars to an increasingly common everyday activity.

Already, there was an abundance of research tools, many low cost or no cost, that could be readily accessed. Moreover, the movement of research into society more broadly only served to highlight the weaknesses and limitations of the traditional university-based research. The fields served by the college were particularly vulnerable as the methods used typically required little or no capital investment,
and we along with others had created an abundance of research talent who would increasingly look for employment outside of the declining higher education sector.

The EdLab approach to conducting educational research in a new way that might withstand the coming digital era had several key elements. First, we engaged directly in the development of digital tools for research such as Survey Sidekick (Hsiao, Malhotra, Joo, Chae, & Natriello, 2013) and Second Look (Cocciolo, Chae, & Natriello, 2008). We conceived of these survey tools as the beginning of a series that we might create to cover the major methods and areas of educational research. In some cases, such as Survey Sidekick, we intended to develop the entire tool and use it both to replace instruction in survey methods and to automate part of the research process. In other cases, we adopted an existing tool with an intention to create an educational research component. For example, deploying the QUUPA location tracking system was the first step in developing additional functionality to adapt the system to support specific inquiries in the field of education (Shapiro, Garner, Chae, & Natriello, 2020). With sufficient time we hoped that the location tracking tool would be useful to the entire community of researchers both within the Learning Theater and beyond.

A second element in the EdLab approach was developing automated methods. We were fortunate to draw on the Columbia Data Science Institute for team members to advance these efforts. Over the years, we developed various methods to do things such as automating web log analysis (Asunka, Chae, Hughes, & Natriello, 2009a), analysis of library records (Williams, Chen, Chae, & Natriello, 2020), analysis of data from learning management systems (Asunka, Chae, & Natriello, 2009b) or parts of such systems like discussion forums (Baid, Chae, Anwar, & Natriello, 2010; Liu, Zhou, Chae, & Natriello, 2016), data gathering across schools and classrooms (Natriello, Pattinsky, Chae, & Cocciolo, 2007), automating text analysis (Liu, Zhou, Chae, & Natriello, 2018), and automation of feedback for authors of research reports (Garg, Chae, & Natriello, 2010; 2011).

A third element in the EdLab approach to research was to test and refine an embedded research approach, that is, research built into processes, applications, and entire programs. Again we were fortunate to be able to draw on the Columbia Data Science Institute and also the Teachers College program in Learning Analytics for team members with the orientation and skills to advance this element of the agenda. We were oriented by our work with adaptive learning (Chae and Natriello, 2017), and we extended this approach to most of the systems we managed for the library (Chen, Chae, & Natriello, 2019; Malhotra, Zhou, Garg, Agarwala, Chae, & Natriello, 2012). The main objective of these systems was not to publish results in journals, but to provide the results of analyses in real time to teams managing the applications who would be able to tune them to achieve desired results.

Our goal in all of the projects to develop tools, automated techniques, and indeed, entire systems with research embedded in their operations was to find opportunities to reduce the cost of educational research, make it immediate, and scalable. We believed that we were on a path to changing the conduct of educational research and prepare
it for a digital future of ubiquitous research connected to things rather than people. This future included the comprehensive reinvention of the educational research center (Natriello, 2018). The future for the people in educational research, both within universities and beyond, would be one of developing research methods as a foundation for automated applications and entire learning systems. It would take years, perhaps decades, for the rise of educational research robots, but we had begun the transition.

**Service**

*Inside Higher Education*

Institutions of higher education have also typically held service to the larger society as part of their mission, and, indeed, for some institutions such as land grant institutions, service is a fundamental part of their identity. All institutions of higher education must attend to the way they are perceived in the larger society, and being perceived as providing valuable service is important to generate continuing support from the public at large as well as from specific individuals who have provided support more directly. Institutions have approached service in various ways. For example, some have attempted to jump-start economic development in their neighborhood by strategic investments (Rodin, 2007), some maintain regular services, and others respond when called upon. Most have at least some full-time staff devoted to community relations.

The service model sadly follows the instructional model requiring a good deal of human labor at high costs that for many institutions will not be sustainable. Moreover, in many cases the results and impact are unimpressive, often leaving the impression of an institution more focused on itself than on those in its environment (Fitzpatrick, 2019). This, along with skyrocketing tuition beyond the means of many, of course, contributes to the declining view of institutions of higher education among the general public and further erodes the bases of support for higher education overall. To make the situation worse, because of the high concentration of labor often required for service, many institutions find themselves spending more to provide whatever service they can while receiving less recognition and appreciation. When the need to maintain and heighten institutional profiles via both traditional media and newer social media outlets is added to the mix along with additional staff with such skills, the financial burden continues to grow, a burden that can only be borne on the backs of tuition paying students. The service dimension of institutions of higher education is ultimately non-sustainable in its current form.

**General Societal Factors**

The digital era presents challenges for the service model of higher education institutions in several ways. First, the expectations of the broader public have changed as they have grown accustomed to a new generation of services. In
many cases those service offerings of colleges and universities seem out of step by comparison. Moreover, at a time when the digital world has made free services the new business model, even modest costs connected with services from institutions of higher education are off putting. Such institutions have even more of a problem with fees because they are often perceived as high costs from well-endowed organizations. This makes it difficult for institutions to achieve their goal of growing support from populations they have not reached in the past.

A second issue concerns the growing professionalization of services as institutions add staff with professional skills in communications and outreach and so add a layer of professionalism to their offerings. Such a layer often comes at the expense of a sense of genuine communications from inside the institutions. In an era when amateur content creators dominate popular social media, the insertion of a staff layer of professional polish again seems out of step. In fact, institutions of higher education are in something of a Catch-22 as they try to provide quality services without truly understanding how quality is increasingly perceived and recognized. One has to look no further than the college or university magazines that feature paid writers and sophisticated graphics to understand just how pointless such products are to anyone trying to get a real look inside the institutions. Perhaps this is why the most popular social media products are often videos created by freshmen about their day-to-day campus life (Nguyen, 2019).

The service mission of colleges and universities ideally extends well beyond the preparation of students to include access to a range of services and resources, which differ depending on the institution and its community. The dilemma for the higher education sector is that its cost structure and its delivery mechanisms are industrial age remnants. They are often too cumbersome and increasingly too expensive. This is true both for service units internal to institutions and the service that institutions intend to render to the outside world. Both applications of the model are becoming non-sustainable and, in fact, becoming ineffective as the digital era progresses. This is because of the expectations set in motion by larger environmental forces. This means that the service dimension is under stress in the digital age.

**EdLab Contribution**

The EdLab contribution toward addressing the challenge of providing service was to develop models of how service in the digital age might be offered. The models included Research Broker, a platform to match outside groups seeking help with research with student researchers looking for interesting projects and perhaps some income. Research Broker provided a simple communication method to allow resources and needs to be matched.

Another effort used a more traditional publishing model to create the *New Learning Times* as a student operated awareness service for the EdTech field. A third, more complex, model was Vialogues, a platform that allowed educators in
the field to upload video resources and develop conversations and discussions around them, all the while building a collection of educationally useful video resources. Rhizr, the content curation platform, represented a second service that relied on the crowd sourcing and sharing of learning content.

These various models all had a few features in common, which positioned them as digital era components for the new college and university service orientation. First, each of the models relied on digital delivery to offer scalable resources and to provide value at a fraction of the cost of traditional university outreach initiatives. Second, each of them engaged students in much of the creation and delivery of the service, avoiding the addition of an expensive cadre of professional staff. Third, each of them were services offered both to internal audiences as well as external audiences. Fourth, each of them could be offered to an external audience, in some cases a global audience, for a fraction of the cost of the traditional external services of the college because each of them relied on a low labor delivery mechanism. Our approach to service to external audiences followed our formula for service within the college. We avoided the middle of mid-cost, mid-impact in favor of the low cost, scalable approaches of the apps noted above, and in favor of high-cost, high-value experiences of the kind offered to external clients of the Collaborative Solutions Group design events.

Conclusion

The EdLab within the library was an attempt to envision the future of education in the digital age and position the library, the college, and the sector to prepare for it. Over the course of 17 years, more time than that given to most innovation efforts, we believe that we made a good deal of progress in developing ideas and working models of a set of practices for higher education in the coming century. Our hope was that our institution, or at least another existing institution of higher education, would find the models of interest and use them to reimagine how higher education might be delivered. Because the hundreds of students and team members who passed through the EdLab over the years have now spread out widely, our hope now rests with them along with anyone who has made it through this book. What I said at the outset is now more true than ever before, “you are the EdLab.” Let’s get started!

References


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The Unfinished Agenda


Introduction

Introducing students to information literacy concepts in their first year of higher education is a common practice. The Association of College and Research Libraries defines information literacy (IL) as “the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning” (American Library Association, 2015). It is manifested in research skills such as topic selection, locating and utilizing resources, and citing sources appropriately. Library literature supports the use of first-year experience courses as a way to incorporate IL into the general education curriculum (Dhawan & Chen, 2014). Moreover, “[w]riting-intensive courses may be the high-impact practice for which information literacy is most often an explored, articulated component” (Riehle & Weiner, 2013, p. 133). By extension, first-year writing (FYW) courses are an ideal way to ensure as many students as possible are introduced to IL skills early in their academic careers. For librarians to be part of such an effort, however, there must be a collaborative relationship with faculty to embed research instruction into the courses faculty teach (Johnson-Grau et al., 2016). Ideally, there should also be a course with student learning outcomes (SLOs) corresponding to IL skills. This case study explores how librarians at the University of San Diego (USD) developed a relationship with FYW and worked not only to build library instruction into FYW classes but also to strengthen ties with discipline faculty and university administrators to implement the most effective approach to library research instruction.

Institutional context

At the end of the 2016–2017 academic year, the instruction program at USD’s Copley Library was at a low ebb. A report conducted by the Reference
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department showed that from 2013 to 2017, library instruction sessions for the academic departments had steadily declined, from 172 sessions in 2013–2014 to 121 sessions in 2016–2017, or a 30% decrease over a four-year period. Most of these were “one-shots,” meaning they occurred once during the semester, as opposed to multiple library sessions throughout the duration of the course (Buchanan & McDonough, 2017). The majority were for undergraduate courses, with no emphasis on either upper or lower division classes. While there was no single cause to which the decline could be attributed, what was evident was that librarians had gone from reaching nearly 3,500 students in a year to fewer than 2,500.

A national, Roman Catholic university, USD has a student population of over 9,000, with nearly 6,000 undergraduates and over 2,000 graduate students. Copley Library serves the entire campus with the exception of USD’s School of Law. The library operates under the traditional departmental liaison model to support more than 900 full-time and adjunct faculty: liaison librarians are responsible for collection development, instruction, and research assistance in their areas and work to build close relationships with faculty. Until 2016–2017, the instruction emphasis at Copley Library had been placed on subject liaisons responsible for cultivating the relationships with faculty vital to maintaining IL instruction.

Under the university’s old undergraduate core curriculum, there was no formal IL requirement and no true FYW program. The old core writing requirement, Composition and Literature (ENGL 121), focused on the critical analysis of literary texts and did not have SLOs truly relevant to IL skills. When a librarian was asked to conduct a session for ENGL 121, the emphasis was typically on a general orientation to the library unrelated to any assignments. Although Goldman et al. (2016) point out, “Students who receive an orientation to library resources and services are more likely to seek needed research assistance with course papers, projects, and presentations” (p. 82), without having the session timed at point of need, librarians did not have a focus to which to tie their content. Dhawan and Chen (2014) also note that research reinforces the notion that “students benefit more from library instruction if it is related to a specific assignment” (p. 425). Librarians also lacked a mechanism to assess the students they reached. Other than the student evaluations of the library’s two credit-bearing classes and student and library peer evaluations for workshops and select one-shots, the library had no evidence to assess instruction as a whole.

Finding collaborators

Opportunities for more targeted IL instruction emerged with the introduction of the University’s new core curriculum in Fall 2017. In development since 2011 and approved in 2016, the revised core curriculum included IL as one of its competencies in accordance with the university’s accrediting body, the Western Association of Schools and Colleges (WASC) Senior College and University Commission, which articulates core competencies in its standards for student
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performance at graduation in the *Handbook of Accreditation* (WASC, 2013). At the time of its implementation, IL was embedded in USD’s core curriculum along with Critical Thinking (collectively named CTIL) in Historical Inquiry courses. Prior to the core’s implementation, the initial Historical Inquiry classes were first approved by the CTIL Area Task Force, which had a dedicated place for one librarian before the implementation of the revised core. A librarian was also part of the original Core Curriculum Committee charged with drafting the core in consultation with the academic units. That said, while the new Historical Inquiry classes did mean IL was now formally embedded in the university curriculum, librarians felt this situation to be less than ideal. Given the range of classes involved, it would be difficult for the History subject librarian to conduct IL sessions in all relevant courses and handle instruction for History classes that did not have the embedded core requirement. Moreover, since these classes occurred at both the upper and lower division levels, a student could conceivably fulfill the CTIL core requirement after the first year of university. A student could very well make it through the first year without any library orientation at all. Research suggests that library instruction appears to be most effective when scaffolded across the curriculum with “clearly defined goals for students at every level of university study” (Bowles-Terry, 2012, p. 91). Evidence cited above also points to the value of students being introduced to library skills in the first year. The situation at USD conformed to neither of these ideals. Luckily, the new core did offer an additional opportunity for librarians to reach students.

With the adoption of the new core, the old Composition and Literature requirement gave way to FYW to fulfill “the core curriculum requirement for lower division Written Communication” (University of San Diego). This class is taken by students in either their first or second semester. With more than 1,200 incoming first-year students in Fall 2017, this compulsory class presented the perfect opportunity to make the maximum impact on introductory library instruction. Copley Library’s Coordinator of Instruction assembled a small team of willing librarians and reached out to the new Writing Program Director about collaborating with FYW instructors.

Two of the class’ SLOs provided the impetus to begin the conversation. Under the heading of *Sources and Evidence*, these outcomes state that:

Students will:

- Use credible sources to develop ideas and arguments that are
- Effective within assigned disciplines and discourses
- Cite sources accurately according to topic and style

*(University of San Diego, 2017)*

The Coordinator of Instruction and another librarian met with the Writing Program Director and FYW instructors prior to the fall semester. While
collaboration with librarians to provide research instruction certainly was not a requirement, instructors were encouraged to work with librarians to support research instruction connected to relevant class assignments. For those instructors unfamiliar with the services librarians could provide, a generalized handout was distributed in person and via email to describe lessons librarians might include in one or more sessions for a given class (see Figure 7.1). Next, an online FYW subject guide was created for instructors to include in their Blackboard pages and librarians to use to direct students to tips for developing search strategies, finding and evaluating print and online sources, and citing references appropriately (see Figure 7.2). Finally, librarians agreed on a small set of core skills on which to focus from section to section. These included the skills listed above as well as distinguishing between scholarly and non-scholarly sources. Librarians had to remain fluid in their approach because while the FYW learning outcomes were static, the content in a given section varied depending on the instructor. Instructors requesting a session with a librarian were asked to provide their syllabi and any connected research assignments in advance. The Writing Program Director ensured the librarians had the contact information for all the instructors and reinforced her support for this project.

FIGURE 7.1 First year writing subject guide.
Successes

Since the goal of this collaboration was relatively modest – to introduce as many incoming first-year students as possible to IL skills and library services through successful librarian/class instructor collaborations – the number of sessions scheduled for the Fall 2017 semester was heartening. Of the 27 class sections, librarians held 15 IL sessions, or 56% of the sections. The librarians also polled a number of students across multiple sections at the end of that semester. The vast majority of these students reported that the FYW section had been their only experience with a librarian in the classroom up to that point. While this is only a snapshot of undergraduate students, with an admittedly limited methodology, the response reinforced some of the librarians’ assumptions about the number of students who previously had not been getting introduced to library skills and resources in their first year. In the spring semester, librarians were able to hold sessions in 18 of 30 classes, or 60% of the FYW sections. In total, nearly 500 first-year students received library instruction through this partnership alone. This translates to over 40% of first-year students admitted that academic year. The partnership with FYW undoubtedly contributed to the overall rise in the total library instruction number, which grew to 213, a 76% increase from the previous year. In all, more than 4,400 undergraduate and graduate students received IL instruction that year, a number never reached previously at the library and a vast improvement from the recent decline.
Continued success and new challenges

The following fall, the Coordinator of Instruction and the FYW library team again met with the Writing Program Director and instructors, this time to discuss successes from the previous year as well as solicit feedback from those who had collaborated with librarians. With the experience of a year-long partnership, librarians were confident in reaching out to individual instructors with whom they had collaborated to ask if they wished to work together again. Most did, and that fall, the partnerships grew further, with IL sessions from librarians occurring in 21 of 31 classes, 67% of the sections. That semester alone, the collaboration meant nearly 400 of 1,310 incoming first year students received library instruction in the fall. Librarians continued these outreach efforts in spring, hoping to capitalize on the success of the past three semesters. It was also time to evaluate the burgeoning program and any challenges faced.

The challenges of which librarians were already aware going into this project were mainly to do with organizational structure, both within the library and the writing program. At Copley Library, there is a Reference department, of which the Coordinator of Instruction is a member, but the department itself does not make decisions regarding library instruction. Up to this point, the Coordinator of Instruction’s role was to chair instruction-related committees, oversee library credit-class scheduling, organize the student and faculty workshop series, and compile instruction statistics. Duties did not include a mandate to coordinate an instructional team for a given task or program. Now that there was a nascent program for first-year library instruction, the Coordinator had to find librarians willing to assist with the FYW teaching load. Two other librarians gladly took on these additional duties, but the Coordinator had to be mindful of their instruction commitments to their liaison areas and, in the case of one team member, a significant role in another department outside Reference. Without more teaching librarians on the team, issues with respect to scalability were anticipated, perhaps necessitating a restructuring within the library to meet the pedagogical and assessment needs required of more robust programming.

One of the organizational challenges with respect to the Writing Program, on the other hand, was that instructors could vary from one semester to the next. Research in higher education shows that disciplines like English employ high numbers of adjunct faculty to meet teaching demands, especially at the introductory level (Morphew et al., 2017). The Writing Program at USD operates within the English department, which conforms to the trend of employing a large number of adjuncts. The department and the Writing Program share the same adjunct faculty, many of whom may teach courses other than FYW in a given semester. These adjuncts are often in temporary positions, and some are quite new to the university and, indeed, the teaching profession. Library literature notes the importance of relationships with adjunct faculty because they often teach a large number of students (Avery, 2013). New instructors may not be familiar with the teaching roles librarians play. Even in the first three semesters of
this collaboration, librarians at USD often found themselves working with new instructors or discovering that adjuncts who taught the class one semester were not scheduled to teach it the next. Without a specific directive to incorporate IL instruction into FYW classes, librarians had to continually cultivate relationships with writing instructors. The value of this engagement, of course, was that the library was collaborating with more faculty as it was making gains in reaching students. The next challenge to tackle was considering how best to assess the IL skills taught in FYW.

Other than interacting with them in class and being present while they conducted searches and asked questions, librarians had little way of knowing how much FYW students were retaining in the way of IL skills beyond informal reports of improved assignments from their instructors. Students’ acquisition of IL skills has been assessed in a variety of ways in higher education, from pre-/post-tests to surveys or focus groups of faculty to measure their “perceptions of success” (White-Farnham & Gardner, 2014, p. 282). Since the initial focus of the library’s collaboration with FYW was on building the program and reaching students, librarians did not have the opportunity to devise an assessment tool. Although there was interest from some instructors in a pre-/post-test, creating, testing, and implementing it would require further time and planning. Because IL is assessed at the university level for accreditation purposes, there was an intentional decision, if only temporary, to postpone assessment of IL in FYW so as not to duplicate efforts. Nevertheless, librarians did serve alongside discipline faculty as scorers of student work for university assessment in both CTIL and Writing. The chance to serve in this capacity created yet another opportunity for librarians to engage faculty and administrators in conversations about IL. Serving on university committees was the other opportunity for participating in meaningful discussion about the core curriculum and the role the library might play as IL programming evolves.

Librarians and university service

Librarians from Copley Library have been full members of the faculty for over 40 years and participate in faculty governance. Silva et al. (2017) note that faculty status can help to elevate the stature of librarians on campus as opposed to being staff members. Any further elevation of status for librarians at USD may be because of increased exposure through university committees. Johnson-Grau et al. (2016) note the crucial role of participating in faculty governance, especially in curriculum committees, to the success of their efforts in influencing conversations about IL. Similarly, librarians at USD sought to leverage their academic status to play a larger role in curriculum development. Serendipitously, university conversations about the appropriate place for CTIL began not long after the library initiated its partnership with FYW.

Following the Fall 2017 university assessment of student attainment of CTIL skills through the aforementioned Historical Inquiry classes, there was a growing interest in investigating a new home for this core competency. After the first full year of the core’s implementation, faculty had a better understanding
of what aspects were working well and what needed improvement. For CTIL, the question was whether learning outcomes of these competencies might be more effectively realized in another course or courses. Challenges of the present model included the heavy burden placed on faculty teaching Historical Inquiry courses and the large number of lower division courses with the CTIL competency, meaning CTIL was not formally embedded at the upper division level.

At the beginning of the 2019 Spring semester, these conversations made their way to the university Core Curriculum Committee (CCC). As previously mentioned, there was already one librarian on this committee. The incoming library committee member was the Coordinator of Instruction. This meant that not only did the library have a potential role to play in shaping the curriculum, but it also had faculty working on the CCC with direct experience coordinating a successful project to embed IL sessions into core courses. Faculty outside of the Writing Program also knew about the partnership between FYW and the library and recognized the librarians involved with the CCC as being active in other IL initiatives at the university. When a CTIL Task Force was formed to investigate alternatives to embedding the CTIL competencies in Historical Inquiry courses, the librarians were asked to join. The Coordinator of Instruction was named as committee chair.

The CTIL Task Force’s charge is to study the pros and cons of several different models of incorporating the competency into the core curriculum, such as flagging critical thinking and information literacy separately in courses across the curriculum or adding IL to FYW courses. The latter option would fit with the library/FYW partnership, but it would still mean IL would happen officially only at the lower division level. Librarians needed to be mindful of balancing their own goal of reaching a maximum number of first-year students with the curricular concern of placing IL in a way that would scaffold it across the curriculum and lend itself to assessing student attainment for core competencies.

The CTIL Task Force is undertaking its charge as of this chapter’s writing. It will be required to discuss its findings at open faculty forums and department meetings and solicit feedback. The next step will be to present the research along with faculty feedback to the CCC, which will then make a recommendation for a new CTIL model in the core to the faculty of each unit granting undergraduate degrees. Challenges will inevitably arise, but being part of the process of curricular change is worth any setbacks. In two years, librarians proved that they could successfully engage faculty and were now an active part of the push to enhance student learning at USD.

Lessons learned

Seek more faculty input

In the push to reach as many students as possible through a first-year requirement, librarians initially did not spend enough time considering the concerns outside IL that could mean library instruction not always rating as a priority for those leading sections of FYW. Although they had multiple one-on-one conversations
with the Writing Program Director and FYW faculty in addition to the meetings where the library collaboration was proposed, instruction sessions could have been more effective had there been an effort to seek faculty input by way of surveys or focus groups. As librarians learned with the charge of the CTIL task force, being supportive of faculty requires soliciting feedback to determine best practices on campus.

**Question assumptions**

Even though FYW does present an attractive option for IL instruction, the writing course is predominantly grounded in writing practice and rhetorical strategies. The two SLOs mentioned in this chapter speak to IL skills, but there is no research requirement *per se*. Other than simply not having the time to devote a class session to library instruction, the most common reason given by faculty for not collaborating with a librarian was that students analyzed writing and incorporated evidence into their assignments using course readings as opposed to outside sources. While recent successes suggest the library will continue to reach a large number of first year students through FYW, this may not be the only way to incorporate IL into the curriculum.

**Build in assessment**

Working with other faculty in sessions scoring both CTIL and Writing was illuminating for librarians working on the FYW partnership, chiefly for the conversations the sessions sparked with faculty about student attainment in addition to the value of seeing student work firsthand. Still, librarians have yet to incorporate formal assessment into the FYW library instruction sessions. Even if the IL core competency is not ultimately placed in FYW, there will still need to be assessment of student learning given the effort that goes in to reaching this many students. Assessments via online modules or pre-/post-tests are near the top of the priority list for program development.

**Conclusion**

To begin with the goal of starting a program that would impact student learning in the first year and end with participating in curriculum reform is more than the librarians could have hoped for. At the outset, they researched best IL instruction practices. This review proved doubly useful when they began serving on the CTIL Task Force and needed to research institutional practices for embedding these competencies into the curriculum. From an outreach standpoint, gains were made in reaching faculty and building relationships. Although the outcomes of these efforts are to be determined, the librarians are satisfied with progress so far and gratified by the response rate from FYW instructors requesting IL sessions and the overall improvement in library instruction. As they move to
the next step of assessment, they can hopefully gain more insight into the efficacy of the instruction and, as will undoubtedly be necessary, further improve upon and augment the program to include undergraduate students at the lower and upper division levels.

References


11 Changing the dialogue

The story of the award-winning Alan Gilbert learning commons

Rosie Jones and Nicola Grayson

Through the creation of the award-winning Alan Gilbert Learning Commons (AGLC), the University of Manchester Library has changed its dialogue with students. This has transformed the relationship into a partnership with both parties taking an active responsibility for learning. This chapter will trace the journey of the AGLC against the context of traditional library models of interaction with students. It will illustrate the process through which students became critical to the building’s success, resulting in a model that is aspired to by future developments at the University of Manchester and beyond. This model not only requires observation from within learning spaces in regard to how students are using them, but it also necessitates an ongoing dialogue that enables students to participate in the co-creation of such spaces from the earliest stages. We will show how the student voice resonates throughout the AGLC itself and is prevalent in all services operating within; it is at the forefront of everything we do. We will demonstrate that a partnership with students is vital to the successful development of new learning spaces, as only by nurturing a collective responsibility for learning can a space be dynamic in both a holistic and practical way.

Framing the problem

Traditionally students experienced academic library spaces as guests, having to respect the ‘rules’ of the house. These rules were not set by or for them and often created barriers as they sought to fulfil their academic requirements. Traditional models for informing spaces and the services within them were designed to accommodate the systems and preferences of librarians and other key stakeholders. This meant that the nature of services, policies, space design and assistance were dictated by the ‘owner’ of the house: the librarian. As a result, prescriptive measures were taken which meant minimal consultation in line with assumed needs that were projected onto the students. Whilst spaces designed in accordance with such models are fit for some purposes, the landscape of the academic library has changed, and thereby also the model of interaction between students and service providers has evolved considerably.

In relation to reference services, the traditional library models (of the pre-1980s) are based on a set of core values or key elements which evolved with
the changing values of the community that the library serves. Tyckoson (2001) cites these values as including accuracy, thoroughness, timeliness, authority, instruction, access, individualisation and knowledge. After 1980 the approach to reference services began to go through changes, for example, the Rethinking Reference project (Rettig, 1992), the Brandeis model of tiered reference service (Massey-Burzio, 1992) and the online call centre model (Coffman, 1999). Each was heralded as innovative in a way that made librarians feel nervous about changes to their role, suspicious of new roles, and worried about the future (in terms of how it could impact on their definitive core values). The role of the library in relation to the community it serves was to provide requested, relevant information and to organise available resources. Tyckoson notes: ‘As faithful servants of the community, librarians took on the new responsibility of helping users find what they needed. This is what we now call reference service’ (Tyckoson, 2001, p. 185).

Visitors to the library were often referred to as patrons and viewed as guests. As such, they were treated as if they needed to be told the rules by which library resources were organised and to be taught how to use and search the collections. The librarian took on the role of question-answerer: the expert on finding information and advising readers of how to further their knowledge and interests. The inherent values of the reference service therefore now concerned information literacy, accuracy, thoroughness, timeliness, authority, advice, knowledge and the promotion of the library within and to the community it serves. Remarkably, even as early as 1876, Green observed that ‘one of the best means of making a library popular is to mingle freely with its users and help them in every way’ (Green, 1876). In a positive sense, the librarian made each patron feel that they were working to serve them individually, and no matter what your class, background or education, the library was a place where people were treated equally. In a contrasting (negative) sense, this positioned the librarian as the keeper of knowledge in respect to the way library collections were organised and could be searched: the librarian set and followed rules that patrons were often unaware of. The librarians’ specialist knowledge therefore created a divisive hierarchy. However, with the advent of new technologies and a rise in public education the terms of the interaction began to level and change, though some core values of early reference services remain constant.

The most commonly recognised models of reference service concern the ‘conservative’ or ‘minimum’ model and the ‘liberal’ or ‘maximum’ model:

With the liberal, or maximum model, the librarian’s responsibility centres on delivering an answer in response to a user’s inquiry. The librarian does not attempt to educate the user in the process; rather, he or she puts all effort into finding accurate and credible information. Conversely, the ultimate goal for the conservative, or minimal, model is to train users to make use of the library independently, as the process of finding information is valued above the information itself.

(Agosto et al., 2011, p. 237)
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With the minimum model, the emphasis is on the process of instruction and the patron is encouraged to be independent. With the maximum model, the librarian answers questions with authority in a timely, accurate way and the patron is dependent upon them for the answers to their queries. Most academic libraries now use a combination of the two approaches; for example, the research student often learns the processes necessary to search through collections and the ‘subject’ librarian would traditionally act as an expert for students and academic staff to consult.

The impact of technology on the reference service effected great changes which called for new models of approach. There were worries amongst the library community that their role would become redundant as a new type of service was necessary to serve a changing (and sometimes not even physically present) community. Some of the models that Tyckoson sets out retain the traditional values; for example, the traditional reference model, the teaching-library model, the tiered reference service and the virtual reference service (Tyckoson, 2001). The traditional reference model is a maximum model where the librarian answers questions for patrons. The teaching-library model is a minimum model where the librarian provides instruction in relation to the research process, usually to groups of patrons, before they embark on research. The tiered reference model (or Brandeis model) involves different staff answering different types of queries: support staff and student members of staff answer some simple quick questions while reference librarians answer more detailed and complex questions. The virtual reference service (earlier referred to as the call centre model) is usually an online service which uses email, chat, or a call centre to answer queries in a timely manner. Some libraries have adopted this approach as it is very cost-effective and can even be provided 24/7; however, Tyckoson notes that satisfaction rates of patrons using this type of reference service are usually much lower.

In all of these models, the services took place in pre-existing spaces that were either built with the reference service models in mind, or they could accommodate these types of interactions. Tyckoson argues that the traditional reference service remains the predominant model in libraries today, but with the changing learning landscape (due to new technology and a rise in use of the Internet in respect to collections) new learning facilities are being built. These study environments no longer need to feature the same reference service facilities (though some values remain inherent); the AGLC symbolises a shift from the librarian as the owner of the house to the students themselves as the ones who need to shape and inform the learning spaces and services that are in place for them.

The ‘information commons’ is heralded as a new, dynamic model of reference service:

On one level the phrase describes an ‘exclusively online environment in which the widest possible variety of digital services can be accessed via a single interface,’ while concurrently denoting ‘a new type of physical facility . . . designed to organise workspace and service delivery around the integrated digital environment’ (Beagle, 1999). This model reflects the way in which
academic libraries are responding to the demands for technology, combining information resources and reference assistance, and creating collaborative workspaces for acquiring and shaping knowledge.

(Agosto et al., 2011, p. 237)

With the increase in tuition fees, students became viewed as ‘customers’ and libraries took steps to rethink their relationship with ‘paying’ students. At the University of Manchester, specialist library assistants became customer service supervisors, and students were treated as consumers who could expect an excellent service in response to the ‘product’ of education. However, evidence is emerging that students recognise that they do not have much power as consumers; in this role they can only comment and give feedback in response to what has already been delivered to them. At the University of Manchester Library the vocabulary used to refer to students has therefore changed significantly: they have moved from being ‘patrons’ to ‘customers’, and now they play a more collaborative role as ‘partners’. We realised that if students are to contribute to helping institutions find solutions to the problems that they care about and are directly affected by, the relation between students and service providers must be reconfigured.

Students gain more power in systems of partnership which value their understanding and experiences; they can work together with service providers using a model that is flexible, holistic, inclusive and open to change. In these respects we can ensure that the model used in the design, development and delivery of our learning spaces continues to remain relevant (National Union of Students [NUS], 2013). Inclusion, participation and the opportunity to co-create their own spaces and services all amount to a more positive student experience, and although this is difficult to measure in respect to general consensus, it is clearly evident in projects such as this one where students have been given such opportunities and can directly express the impact this has had on them (e.g. through testimonials).

Initiating a dialogue

The collaborative relationship used in the development of University of Manchester Library spaces treats students as partners; they are no longer guests, or customers, but are active in the ongoing co-creation of their study spaces and services. The use of participatory design methods increased as the project progressed so that the partnership evolved and students were engaged as consultants and stakeholders. Participatory design ethnography has also been used in the US in the creation of new learning spaces (e.g. Purdue University’s Active Learning Center, a project led by anthropologist Nancy Fried Foster).

The journey towards the opening of the AGLC in October 2012 inspired the initiation of a new dialogue with students and was part of a wider university initiative to engage, listen to and act in response to the student voice. Designed by students for students, the AGLC was the University’s first building project to properly embed the student voice in its governance. Student involvement in every decision, from grand concept through technology choices, furniture design, interior colour,
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opening hours, right down to the selection of the coffee, gave strength and credibility to this important partnership.

Typically the student consultation started as an information gathering exercise and fell within the traditional models of interaction in libraries: treating students as guests. For example, the feedback from students was viewed from a customer service perspective as they raised issues that we (as owners of the service) sought to address. As such, the initial driving forces behind the creation of the AGLC as a project were drawn out of common complaints received from feedback mechanisms across the library sites. The key issues that students raised were:

- Longer opening hours
- More space
- An increase in study rooms
- More power and data.

The University of Manchester’s existing library and learning spaces could not satisfy these demands, and this motivated the creation of a new type of learning space.

In 2008 the University’s approach started to diverge from a model of interaction where students were treated as visitors or guests when staff were asked to consider spaces from the student’s point of view. A learning space survey was sent to the Heads of School and they were asked the following questions:

1. What types of learning spaces do you presently offer in buildings that are managed by your school?
2. What sorts of learning spaces do you feel your students may be limited by within the present availability and configuration of space in your school?
3. What sorts of space are you presently not able to offer (or offer enough of), for example, spaces for group work or particular kinds of technology to enhance learning?
4. Which elements of your present learning spaces work best for students?

The final question initiated a change in approach as it encouraged consideration from a user perspective.

This survey still took a prescriptive approach to the students’ needs and relied on the opinion of the Heads of School as key stakeholders. However, there was a shift in value with respect to a need to improve the student experience, and the results gained demonstrated that more social and group meeting spaces were wanted across the schools. The survey also revealed a requirement for PCs and access to new technology as well as 24/7 bookable learning spaces. This gave a baseline indication of what was needed in the AGLC space, and working within the traditional approach could have signalled the end of the consultation process. However, further consultation was then carried out to gain actual student input which first supplemented and then replaced any presumed requirements.

A social learning space survey was addressed to the whole student body in 2009 to gather student insight into their use of learning spaces. It centred around their
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use of technology, what they viewed as important in such spaces, group study rooms, and how they preferred to access help. Over 2,000 responses were received, and this survey not only gave invaluable data which informed early AGLC designs, but it also involved students in the brainstorming and research stages of the project. The survey marked the start of the partnership as the library invited students to embark on this exciting new journey with them. Of the 2,000 respondents, 68% were already using our existing study spaces. We therefore had a balance of input based on what worked already (and what didn’t), and we had the opportunity to identify what was preventing other students from utilising existing spaces. The survey gave us data that enabled us to see that there was a high demand for group study rooms (as 41% of students were already using them) and physical PCs (as 66% used the computer clusters), so it was vital that these aspects were included in the new space.

The student input gained from this survey challenged many presumptions about a Learning Commons space that had been made even at this early stage. For example, the library and the Heads of School had assumed that most students would use laptops instead of desktop PCs, therefore initial designs reflected low numbers of desktop PCs in the space. However, when the students themselves were consulted about this, 45% said they did not bring a laptop in with them to study, so we had to rethink. In addition, technology-rich spaces were seen as a priority for the Heads of School (in the previous survey), but the students themselves made comments such as: ‘No fancy stuff, don’t waste money.’ This low-technology requirement was confirmed when technology-rich group rooms were presented to students. In early designs these spaces included advanced kit such as interactive work surfaces, but the students in no uncertain terms steered us away from this approach, claiming all they needed was a whiteboard, a table and chairs, and a screen. They wanted equipment that they could use easily and that required little technical support and instruction from staff. Students told us what was important to them in a study space: reliable Wi-Fi, silent study spaces, PC provision, desk space, comfortable seating and food-friendly areas. With the traditional reference model of a library space this consultation would not be deemed necessary and therefore would not have occurred. As a result, anything not fit for purpose would only have been identified after launch, when problems were demonstrated in customer behaviours through low usage and pointed out in negative feedback.

By 2010 students had started to take on the role of important partners in the key stages of the development process. Representatives from the Students’ Union were embedded in the governance of the AGLC project and were given a voice as part of the Project Committee and Implementation Group. The Students’ Union representatives participated in and informed key decisions in relation to design and policies, right through to how the learning space would be staffed. At times the dialogue on the committees was robust and challenging, but the representatives could demonstrate the validity of their opinions with reference to feedback gathered from other students (often from social media groups). The student representatives gave input that at times stood in direct contrast with the assumptions being made by the committee. This meant that decisions had to be rethought in order to ensure
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that students would get exactly what they required of the space, not just what we thought they needed. An example of how policy had to be completely rethought for the AGLC can be found in relation to food and drink.

The food and drink policy is now the most relaxed the library service has ever had, as students can eat cold food and take drinks (with lids) into all areas of the space. The student representatives helped us to see the way students work from their perspective; they encouraged us to value their ways of working on an equal footing to our own. Students were clear about their needs so that we understood how they would be working in and using the space. Just as we would expect to eat or drink at our desks (especially at times of high pressure), so too did our students. We therefore decided to break the old rules of the house – which prohibited food and drink within a library space – and embrace a much more relaxed policy that allowed cold food and drink throughout the building. In fact this has actually been one of our most successful policies in the AGLC. The Students’ Union representatives agreed to fully support the library should this new policy become problematic and need amendment or withdrawal; there were worries that we would end up with a huge litter problem and damages, but this has in fact become easier to handle. Students tell a member of staff if they spill something (they no longer need to hide it), and we pushed for the most robust cleaning model on campus so that litter when left is obvious rather than concealed. This policy serves as a clear example of how years of behavioural observation were confirmed by the initiation of a dialogue that did not seek to change or challenge student behaviour, but to negotiate terms that both parties could work with. As a result, a depth of understanding – as to why students behaved in this way and needed to work like this – was achieved that traditional library models of interaction would not have reached.

In the summer of 2011 students got to test the AGLC ideas when a pilot space was set up in the Joule Library (part of our North Campus). Traditionally a pilot would have been used merely as an opportunity to introduce students to what we (as experts) had in store for them in their new learning space, but this one had a different objective. Ordinarily students (as customers) would only get the chance to feedback on furniture, space and technology after these things had been chosen and implemented (e.g. by demonstrating their dissatisfaction). However, the pilot space was used as an opportunity to see how concepts would work in reality and to test out furniture (tables and chairs of different heights and designs) in a practical way. Staff were not only able to observe how the space was used by students; these observations prompted useful dialogue that enabled us to gauge what students valued about their study environment. The pilot space proved a good opportunity to collect some qualitative feedback responses that went beyond the set questions in the social learning space survey of 2009 and once again enabled deeper insight into our students’ study needs and preferences. It also enabled us to take some initial ideas to a wider demographic of the student body (beyond that of the student representatives) and to present students with different types of study space (individual spaces, group spaces and also a group room) and different PC setups before deciding definitively on these for the AGLC itself.

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By working with students as partners we learned how the space would work in a practical way and we were able to make vital changes to the main AGLC project. Feedback was obtained through focus groups, informal chats with those using the space, and further supplemented by responses gathered by customer service staff. Making changes at this stage – before furniture and equipment was purchased on a wider scale – proved extremely cost-effective and helped us to ensure that the space was as fit for purpose as we could make it before opening. On the basis of feedback we rethought a number of decisions around furniture, technology and accessibility. The pilot space showed us that in the group room setup the input leads were not conveniently placed for the students and the height of the whiteboards was not accessible. These and other comments gathered in respect to the pilot group room helped to shape the design, technology and appearance of the bookable group study rooms that we now have in the AGLC. Feedback from the pilot space even informed a decision to provide privacy screening on the glass for the group rooms in the AGLC. Student feedback prompted the decision to remove the arms on PC chairs, informed the choice of a ‘freemote’ PC setup (which is clutter free and made desk space more flexible), and allowed for a robust testing of many products. The response to the pilot space informed many of the choices made for the AGLC and ensured that practicality and student needs took priority over what was pleasing aesthetically.

In December 2011 a student consultation group was set up with Students as Partners, which consisted of a series of discussions targeting key stages and areas in the development. During consultations students voiced their opinions about what they knew about the concept of a Learning Commons. They were asked to consider what it could mean for their own individual and group learning methods, how it could impact on and affect their personal development and what content would be useful on our interactive screens. We held further consultations in 2012 where students were asked to explore specific ideas such as the provision of skills sessions and the development of an innovation area. They were also asked to think about a prospective role for student members of staff (who were then called Learning Advisors but later became the Student Team) and worked to generate an appropriate job description for this role. In recognition of their valuable input, student consultants were given an exclusive ‘hard hat tour’ of the space prior to the official opening of the AGLC. As they walked round the building they were surprised and pleased by how much their suggestions had been acted upon and were delighted with how the concepts they helped to generate had become a reality: ‘My voice has been heard and hopefully inspired other students to share their own!’ (Linguistics and English Language student and participant in the 2011–2012 consultations).

In early 2012, to provide inspiration for everybody studying and working in the AGLC, students were invited to draw or capture an image that stood out as representative of Manchester students and the Manchester experience. As students were instrumental in the planning and consultation stages it was natural that their creativity should appear on the very walls of the building designed to inspire them, and this is a key element that makes the AGLC unique. The art competition received 450 stunning entries from all disciplines; submissions included...
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drawings, photographs and poetry, all of which are unique to the University and to Manchester. Sixty-five bespoke pieces of student artwork feature in the AGLC; they are printed onto the walls, doors, and glass panelling of the learning spaces for everyone to see. Students were extremely proud that their work had been selected and often brought friends and family to see it in the building. These artworks inspire others, and the images in the building are frequently used in social media posts about the space, but it is the opportunity that students were given to participate actively in the design of the space that affirms it as theirs. This contributes to a more positive student experience as a result of this ongoing dialogue with the library service, where their views are respected, valued, listened to and learned from.

A selection of students who were involved in committees and consultations or who successfully submitted artworks were invited to the building’s grand opening. This again broke with tradition, as such an occasion usually involves mainly VIP guests. The building also remained open to students for study throughout the launch event, showing how the student experience is valued and lies at the heart of every decision surrounding the AGLC. As part of this event, tours were taken round the building and the student artists stood near their artwork to explain their creations. The Students’ Union General Secretary, who had been heavily involved in the project, also shared the stage to give a speech with the University Librarian; this act once again demonstrates the value that both sides saw in the partnership that had been cultivated throughout the project. A specially commissioned book was produced for the event, a copy was presented to each guest and the pages were dominated by the students’ impressive artworks.

Feedback from early tours was really positive, with many comments about the space and design, and an eagerness from students to spend time studying in the Learning Commons. Numerous responses displayed a pride in the building and recognition of the University’s investment in the student experience: ‘Very good, very impressed, can see where my £9,000 went’ (quote from a student on prelaunch tour).

The comments we now receive (mainly through social media) continue to be favourable, although there are suggestions for improvements. Changes have already been made in response to these, including replacing a number of coffee tables with desk-height tables, reducing lift announcement noises and introducing a ‘Text Me’ scheme. We also monitor behaviour and rather than dealing with ‘bad’ behaviour by reinforcing the rules, if students act a certain way we try to help them achieve their needs and keep the dialogue open. For example, students using a particular piece of furniture were repeatedly pulling up part of the floor to plug into sockets below – traditionally, having observed this we would have stopped such behaviour, but instead we installed extra power sockets into the furniture itself to address the students’ need to use it this way. We also received feedback that the hand dryers in the toilets were too loud (and this was disruptive to the students), and so in response we have replaced them with quieter models; this shows the students that we are willing to listen and respond to their concerns.

The approach to the co-creation of the AGLC has changed the dialogue with our students; feedback is given rather than complaints and as such the space and the
services are constantly evolving. From the initial day of opening, even as equipment was being plugged in, students were settled in the space with their feet up on furniture (without their shoes on). They are comfortable in the space they co-created, they recognise that it is here for them and they are eager to remain valued consultants who continue to be part of the journey; we know this as they respond very quickly when asked for comment.

**Business as usual**

The AGLC is the UK’s first ‘bookless’ library (1st library to have no books, 2012), therefore the services that take place within diverge greatly from some of the traditional reference models mentioned earlier. Some key aspects remain, as front-line customer service staff assist students by answering questions and instruct them on how to use library resources (they also operate a Library Chat service and answer email and telephone queries). However, the main difference lies in the fact that there is no physical collection, we have a Learning Development Team that teaches academic skills and showcases new technology to the students, and our customer service staff also deal with a high number of estates issues (as the AGLC is a new building). Customer service staff log maintenance requests and chase works that needs to be done whilst ensuring there is minimal disruption to the students. Their roles differ from those of front-line staff in a traditional library model as they play an intrinsic part in organising maintenance, tracing and initiating the development of new services and ensuring the ongoing evolution of the project.

To give you an idea of how the AGLC runs its services we will give a brief overview of the different departments operating within. Each of these departments has a connection to the student voice embedded within them as this forms a key part of our ‘business as usual’ operations. There are three main departments within the overall team: Customer Services, IT Support and the Learning Development Team. Each one maintains a dialogue with the students that goes beyond a simple ‘you said, we did’ approach and takes the form of an ongoing conversation as student feedback is acted upon, responded to and continues to influence the services. Students are engaged in an ongoing dialogue that does not concern reactive, prescriptive interaction but emphasises collective responsibility more along the lines of ‘you said, we think, what should we do together?’ The services within the space are designed using a holistic model which treats feedback as a key indicator in relation to the needs of the community (of students) that it serves, so that the services and space can evolve accordingly.

Some examples of how students have informed customer service policies can be found in respect to food and drink (as already discussed), opening hours, and how they express different needs during exam time. During this time students asked for extra desk-height furniture, they requested silent zones and they wanted extra study spaces. These changes are now put into place for each exam period. Students also influenced policy to initiate a Text Me service so that they can contact a member of staff (anonymously if they wish) to make noise complaints, give feedback or ask questions. Our Customer Service team have developed a mapping programme
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so that they can monitor how students are using furniture and the spaces to ensure these are configured in the way that is most useful to them. Student feedback is reacted to in a positive way; we ask why they are behaving in this way? Is there a need that’s not being met? What are they trying to tell us?

In the AGLC we have a physical IT support desk integrated with Customer Services and, in direct response to student feedback, the hours of this support were extended from 9 a.m.–5 p.m. throughout the week to 9 a.m.–9 p.m. every weekday and 9 a.m.–5 p.m. at weekends. We learned that more students were bringing in devices to help them study and use the space. In response to this there was demand for a new type of IT support. Central IT services therefore used what we had learned about the needs of students (by working in partnership with them) to develop a pilot project concerning a Personal Device Support Desk. This desk is currently managed by a graduate intern, and student members of staff are employed to advise fellow students on software provided by the University and to give them guidance on how to fix problems with their personal devices. The desk currently has a 98% resolution rate for the problems they encounter, and due to the success of the pilot project this service is being extended.

The Learning Development Team deliver and manage the Open Training Programme which forms a significant part of the University of Manchester’s library skills programme: My Learning Essentials (MLE). The Open Training Programme combines one-to-one support with workshops and online resources, and MLE recently won the Blackboard Catalyst Award for blended learning. Many partners work together to deliver workshops, for example, the Careers Service, the Counselling Service, the University Language Centre, Manchester Business School and the Cultural Institutions (including Manchester Museum and the Whitworth Art Gallery). As the AGLC is located at the heart of the campus, it serves as a convenient and accessible centralised location from which to offer such support to our students. The objective behind the programme is to creatively engage students and ensure a positive learning experience using methods which foster a growth mindset in relation to learning (Dweck, 2008). In contrast to the type of instruction traditionally offered (e.g. in the minimum model), the Open Training Programme utilises a workshop format to emphasise active learning and the technique of facilitation which reinforces the status of the students as independent learners. As a consequence of these methods, the librarian is removed from the status of ‘expert’, and responsibility for learning and searching for answers remains in the hands of the students themselves. During the workshops the facilitator works with the students (and gets them to work with each other) to emphasise collaboration and encourage them to make progress rather than to strive for perfection. In summary, the methodology behind the training necessitates a workshop format (to encourage engagement and activity), sessions must be open to all students from any discipline and of any status, and sessions must be skills based (so that students can immediately put into practice what they have learned). All workshops must also be open to feedback, as it is not only important for students to feel that their feedback is useful for effecting change, but that it gives them the chance to inform and co-create future sessions (Hattie and Timperley, 2007). The methodology behind the
programme is designed to encourage learners to construct their own learning experience, and it is underpinned by research (funded by the HEA and the NTF) into ‘HEARing student voices’ conducted by Jennie Blake et al. The study indicated a need to ask not ‘What do students need?’ but ‘How can we get students involved as co-creators?’ How can we make sure students are proactively looking for support before they reach a crisis point? The objectives behind the resources on offer in the programme are therefore to assist students so that they can support themselves (Blake et al., 2010, 2011). In many ways the programme sits so well in the AGLC as it promotes the same values and methods with respect to treating students as partners and requires the same dialogue to ensure that student needs are being met.

The Learning Development Team mark a new addition to the traditional models of reference service as, in addition to traditional library teaching models (which centred around bibliographic instruction or information literacy), this team also deliver academic skills support and give students the opportunity to interact with and learn about new technology. The student voice is embedded within the Open Training Programme, as students can give feedback in response to training that has been delivered and they can submit ideas and requests for training that is not currently part of the programme. In this way they shape their own learning experience, and the team are proud to have a really quick turnaround when it comes to producing new workshops – an important attribute, as it means that any student who requests training is also able to attend it. Examples of such sessions include ‘Critical Reading’, ‘Reflect on Your Performance’ and ‘Understanding British Culture’, and workshops which help students to ‘Manage Exam Stress’ and ‘Present With Confidence’. If students need support with developing or improving upon particular academic, well-being, career or information literacy skills, the mechanisms are in place for them to raise this concern and inform us so that the programme can facilitate their progress. Our students have the power to dictate, mould and shape the support that is on offer to them, and the high number of attendees is a testament to the success of both the programme and its methodology. We are currently at the end of year 2 with the Open Training Programme, and the number of attendees at workshops has increased by 61% compared to year 1 (from 2,424 to 3,899). Exemplary student feedback is used to promote the programme on the digital signage around the AGLC, to demonstrate the way it impacts on the students and their experience.

Our AV and New Technologies Coordinator is also part of the Learning Development Team and runs Digilab in a joint venture with Digital Technology Services (this serves as another example of a role that sits outside of those in the traditional reference models of service). Digilab is a regularly scheduled event that gives students the opportunity to interact with new technology in a pressure-free, relaxed environment. Students can suggest technologies to be tested and can pilot their own technological developments (e.g. apps, electronic devices or websites). At Digilab events, members of the Student Team are on hand to help demonstrate the technology to their peers, and the emphasis is not on teaching but on experimentation and exploration. Examples of the technology Digilab has tested out include Oculus Rift (virtual reality) environments, Google Glass, and 3D printing.
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events provide students with the opportunity to participate in and influence decisions concerning the types of technology that the University should buy (and what it should/could be used for). Digilab also gives University staff the opportunity to test out different or competing brands of technology, as well as things they have designed themselves (e.g. a careers management database) so that they may gather valuable student feedback.

In addition to these departments our Student Team are student members of staff who rove around the building – they collect data in relation to how the space is used and help with the evaluation of services from a Customer Service, IT and Learning Development perspective. The Student Team promote MLE, they help to inform the workshops and they provide an invaluable link to the student community. The team are paid members of staff who work two 4-hour shifts a week, though we are flexible with them around exam time. We are currently working with our second generation of staff, and the first generation have helped to train these by sharing what they have learned in relation to the departments within the building and their role in relation to each area. The students have gained a wide range of valuable skills, such as customer service experience, project management skills, presentation skills, data collection and analysis experience, political networking skills and an insight into pedagogy, research methods and evaluation.

In summary, the student voice is embedded as part of business as usual in all aspects of the teams that work within the AGLC, which ensures that they continue to evolve with the changing needs of the community. The statement made by Green in 1876 retains its relevance: in the AGLC the space is popular amongst students as we have sought to break down the traditional barriers between staff and students. As a result, both are ‘owners of the space’ and the services within.

Future shaping

Allowing students to be co-creators of a library space has been a radical change for library staff. When recruiting staff to work in the AGLC it became apparent that there was a real fear of the unknown on the part of potential applicants and amongst those who had already been recruited. Although certain functions could be predicted, the main requirement for obtaining a post in the AGLC was an ability to respond to changing student needs and to identify opportunities to continually improve the student experience. As the library service moved forward into new territory, staff had the opportunity to shape their own job roles (to an extent), however not everyone was comfortable with this. It soon became clear that recruiting people who embraced this creative approach was crucial to the success of the building and its services. Our new staff developed their job roles with energy and enthusiasm; this is now viewed as a real plus point for the building and is something that the library is keen to capture elsewhere. The team are dynamic, proactive and experimental in their approach to working in the space and students really appreciate their responsiveness.

The innovative approach taken in the creation of the AGLC was recognised as we won the Guardian Higher Education Facilities Award in 2014 (see Guardian University Awards 2014 Ideas Bank, 2014). This award uniquely concentrates on
the impact of a facility rather than the aesthetics of a building. Many buildings win awards for design rather than functionality, but what we have captured in the AGLC exceeds its presence and appearance as a physical building; we sought to engage students by embedding learning within the very heart of the space. Fresh, dynamic library roles have been created and we have engaged in new types of ongoing dialogue with the students; both of these advancements inform the evolving library landscape. The AGLC journey has taught us that it is really important for clients to assert the importance of functionality to their design teams when engaged in such a project. We continually had to ensure that the focus always valued the student experience over visual appeal (although ideally you can have both).

The journey for the University of Manchester Library does not end here: the new dialogue created during the AGLC project continues to be developed. This process marked the start of a journey, but our partnership with students continues to inform both the AGLC and University-wide developments:

Close student partnerships continue to be central to the further enrichment of the AGLC, as we consider future needs and evaluate the building’s success. We now need to fully understand how the building and its services are used – we will then contribute our experience to other new and ambitious university plans.

(Jan Wilkinson, Guardian University Awards 2014 Ideas Bank, 2014)

Following on from the success of the AGLC in terms of its consultations and student participation, students are now part of the journey to redevelop our Main Library building. In 2013 they took part in a consultation for a new project to redesign the Main Library. Students were challenged to consider what a world-class research library should look like and how it should relate to other facilities. The partnership with students will continue throughout this project and we will build upon the best practices learned from the AGLC development to co-create this space and enhance the student experience for the future.

The AGLC project has uniquely informed other University of Manchester estates projects and, as part of the ‘Manchester 2020 Vision’, the University will invest £1 billion over the next 10 years to create a world-class campus for our staff and students. Other library and learning spaces are being developed across campus and the AGLC has enabled us to share a model of best practices in relation to treating such projects as an opportunity to co-create spaces with our students so that we can pool our perspectives. The library will utilise the AGLC as a space to trial potential concepts and ideas to the wider student body to assist with and input into these new developments. A desire to share good practice has gone beyond internal audiences, as the AGLC has been visited by over 100 other higher education institutions:

A HUGE thank you . . . it was so inspiring and I feel very excited for our similar project . . . I really appreciated all the nuggets of info and advice that you shared.

(quote from a visiting university staff member)
We will continue to try and share our experiences and knowledge through journal articles and conference presentations within the UK and abroad, but if we could give one invaluable piece of advice from what we have learned, it is this: we genuinely believe that the success of the AGLC is due to the way we changed our dialogue to engage students as partners throughout the whole process. They helped us co-create this space, and together we continue to take a collective responsibility for improvements by learning from one another and keeping the dialogue between us current and open.

Notes

1 Information commons is an early iteration of Learning Commons though the latter differs in respect of its physicality: its presence, make-up and design.

2 Often a question of the ratio of desktop PCs to laptop spaces is still asked when tours are delivered on the AGLC. Currently we are of the belief that there is no formula for calculating this in the space. We feel the AGLC would still be heavily used if desktop PC numbers were doubled and equally so if they were reduced by half. We would advise that flexibility of space is key, and that the more spaces that can be used for either function, the better.

3 The arms on PC chairs were being damaged by the desks and students did not think they were necessary. Student feedback caused us to disregard certain pieces of furniture (e.g. pinch stools that were aesthetically appealing from a design perspective, but the students told us they were not fit for purpose). Some furniture also failed after high usage despite assurances from suppliers.

4 Students as Partners (SaP) is a programme of work managed by the Teaching and Learning Support Office in liaison with the Faculties at the University of Manchester – see: http://www.tlso.manchester.ac.uk/students-as-partners/

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1st library to have no books, 2012. *Sun*, 20 September, p. 29.


Rosie Jones and Nicola Grayson


Finding Common Ground: 
An Analysis of Librarians’ Expressed Attitudes Towards Faculty

Lisa M. Given
Heidi Julien

SUMMARY. Information literacy listservs provide opportunities to discuss a range of instruction-related issues. One common theme is librarian-faculty relationships, including positive interactions and complaints. Content analysis is used to investigate librarians’ discussions of faculty in BI-L/ILI-L postings from 1995 to 2002. By isolating and anonymizing postings reflecting librarian-faculty relationships and examining these through the authors’ experiences as trained librarians and full-time faculty, the paper explores: (1) how librarians frame faculty relationships; and (2) librarians’ perceptions of faculty attitudes. The paper concludes with suggestions for transcending unsatisfactory

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KEYWORDS. Information literacy, content analysis, librarians’ perceptions, listservs

INTRODUCTION

At universities and colleges, librarians and teaching faculty are increasingly working together to offer students support in building strong academic information literacy (IL) skills. However, forging and maintaining strong working relationships between faculty and librarians is no easy task. Misperceptions about different work roles, as well as misinterpretations of personal motivations related to IL instruction, can hinder the development of productive collaboration. By examining and reassessing beliefs about one another, faculty members and librarians can develop strategies for finding common ground in the instructional environment.

LITERATURE REVIEW

There is an extensive body of literature in library and information studies (LIS) that examines trends in information literacy education. Librarians and LIS scholars have examined professional and theoretical issues involved in guiding individuals in the use of information resources, the design of successful library research projects, and the development of information strategies for lifelong learning. Approaches in the literature address a number of contexts—from public to academic libraries, as well as corporate and other special information centers—and focus on the full range of activities that comprise information literacy instruction (e.g., library tours; database searching sessions; critical evaluations of Web resources). Many of these have been written with the specific goal of sharing IL successes in order to guide others in the development of new programs, in the assessment and revision of existing sessions, in the use of technology, or in the management of other incidental instructional components (e.g., Bodi 1990; Drueke 1992). Many
professional and scholarly articles also explore the importance of having key outsiders “buy-in” to the importance of information literacy instruction as one core component to the success of these endeavors (cf. Julien 2000; Julien and Boon 2002). Many articles that address the academic context, in particular, regularly identify the support of teaching faculty as a vital component of successful IL initiatives. Before examining librarian’s expressed attitudes and experiences with faculty, it is important to first understand the practical and theoretical contexts surrounding this issue.

Faculty and Librarians’ Roles in Information Literacy—A Clear Divide

One of the most prevalent themes discussed in the IL literature is that of the experiential separation between faculty members and academic librarians. Although both groups are engaged, at one level, in pursuing the shared goal of educating undergraduate and graduate students, there are many points of difference that affect the faculty-librarian relationship. Numerous articles portray reference librarians’ professional goals (i.e., aiding and teaching students in the effective use of information resources) as being at odds with faculty members’ research, teaching, and service work. In these discussions, librarians are placed in a supporting role on campus, as individuals whose primary purpose is to offer support for learning activities, particularly, undergraduate students’ information needs (e.g., Farber 1999; Hanson 1993).

At the same time, faculty members are portrayed as sitting outside—yet connected to—the daily activities of the academic library. Here, faculty are discussed primarily in their roles as teachers who set curricula for their students (and by extension, influence librarians’ work in supporting students’ needs). Hardesty (1999), for example, identifies faculty as “the most important group, outside of librarians, who need to understand and appreciate the educational role of the academic library” (243). However, he notes that a major point of conflict is a faculty culture that privileges research, content and specialization, while undervaluing teaching, process and undergraduate students (244). Hardesty marks faculty members’ resistance to building library instruction into their classes as a natural reaction to living under constant time constraints, spending “most of their day doing something for which they have little formal training—teaching” (244), and having a limited exposure to librarians’ skills and expertise due to inadequate library support during their own undergraduate or graduate study. While Hardesty
(1999) makes clear that faculty members’ actions (or inactions) concerning the library arise more out of ignorance than malevolence (244), other authors are less forgiving, and judge faculty members’ inattention to IL as a competition that must be tamed, turf that must be claimed, or as a battle to be won (e.g., Chiste, Glover, and Westwood 2000; Snively and Cooper 1997).

Other studies of faculty members’ attitudes toward the library (and IL, in particular) provide additional context concerning faculty members’ perceptions (e.g., Cannon 1994; Gonzales 2001; Leckie 1996; Leckie and Fullerton 1999). In an opinion piece entitled “What I want in a librarian: One new faculty member’s perspective,” Stahl (1997) puts a very personal face on the issue, noting that faculty members want: proactive involvement from librarians—tempered with an acute sense of when to back off; clear communication about the limitations of librarian support for research activities; to be asked for input on library collection development; and, information on new and useful resources within the library. In a companion piece to this work (entitled “What I want in a faculty member: A reference librarian’s perspective”), Larson (1998) compiles her own list of wants and needs: faculty recognition that librarians are in the same business of serving students’ needs; clear communication with librarians about what is going on in a course; a basic familiarity with the literature and research tools in the faculty members’ field; and, involvement of librarians in the design of course assignments, so that they match available library resources. These two works show, in a very personal fashion, the complex issues and emotions surrounding faculty-librarian working relationships.

**Librarians as Advocates for Collaboration with Faculty**

Many authors implore librarians to forge stronger, more effective working relationships with faculty, and collaboration in IL instruction is one of the most prevalent solutions offered in the LIS literature. Carlson and Miller (1984), for example, note that involving faculty members in library instruction not only allows librarians to be active participants in the library (beyond simple caretakers of the collection), but “the nature of the courses themselves may change, with more emphasis placed on independent library investigation as an integral part of the course” (484). Much of the current literature advocates this integrated model of faculty-librarian working relationships, and points to the development of formal IL courses and programs within established academic curric-
ulis as ideal ways to meet students’ needs with full faculty support (e.g., Eliot 1989; Stein and Lamb 1998).

While there are numerous benefits to be gained from collaborative partnerships, many authors also point to the pitfalls of poor relationships—particularly in light of existing problems that must be overcome in order to build effective IL programs. And, as many authors note, the onus is frequently on the librarian to create collaborative partnerships (e.g., Bruce 2001; Chiste, Glover, and Westwood 2000). Some authors see this role as one of faculty development, of teaching faculty about the importance of building the library into courses or assignments, and seeing beyond the library’s collections to what librarians can offer students. Cardwell (2001), for example, notes that faculty members often create “problematic” assignments when partnerships with librarians are limited or non-existent; where faculty members fail to take the institution’s resources into account when designing assignments, students are left to flounder as they attempt to complete assigned work (258). By forging relationships with faculty—by connecting with them at the reference desk, or conducting one-on-one consultations regarding IL strategies appropriate to their classroom needs—many authors point to the benefits that can be made in the development of IL programs, and in serving students’ needs (e.g., Carlson and Miller 1984; Hardesty 1999; Iannuzzi 1998; Ren 2000; Winner 1998).

**METHODS**

Cardwell (2001) advises librarians to “Subscribe to BI-L [ILI-L], or search its archives . . . An active listserv, BI-L[ILI-L] hosts informative discussions on all types of instruction issues. You will learn about programs, successful and unsuccessful, that have been implemented at other institutions. It is also a place for posting questions and joining in on current discussions” (262). It is the prominence of this listserv among IL professionals that prompted it to be selected as the primary source of data for this study. With approval from the moderator, the archives of the listserv were analyzed using a qualitative content analysis method, for postings that related to librarians’ relationships with university and college-level faculty members. The seven-year period from September 1995 to December 2002 was included in the analysis. During that time, in May 2002, the listserv changed its name to ILI-L (reflecting the “information literacy” terminology), and got a new moderator. All the postings to the listserv for the period in question were
read, those that related to librarian-faculty relationships were separated out, and then these were inductively coded for apparent themes. To ensure trustworthiness, the qualitative analyses were conducted by two research assistants, and the authors. In addition, the number of postings relating to each major theme were summed to identify broad trends in posting patterns. In the sections that follow, the term “librarian” is used to refer to posters of messages on the listserv; these posters self-identified as having active roles in the development of IL programs and/or the implementation of instructional activities within their libraries.

RESULTS AND DISCUSSION

Quantitative Analyses

Prior to completing qualitative analyses of the postings to BI-L/ILI-L, some quantitative analysis was done to assess the relative interest in particular themes over the seven-year period. Postings marked as relevant to the faculty-librarian relationship theme were totaled by yearly quarter (i.e., January to March, April to June, July to September, October to December). Postings relating to perceptions of faculty (including their personalities, competencies, and roles) were by far the most common, with an average of 28.4 postings per quarter. Postings about librarians themselves were the next most prevalent, with 18.9 postings per quarter. Finally, postings that focused on librarians’ beliefs about faculties’ perceptions of librarians averaged 4.2 per quarter. These trends held for every quarterly period. Figure 1 shows these trends, and demonstrates that postings were greater in number between October and December in all years, possibly reflecting peak periods of instructional activity for librarians subscribed to the list.

Appropriate Roles for Faculty Members–Librarians’ Perspectives

Listserv posters expressed a range of expectations for teaching faculty, from grading library instruction assignments, to dealing with plagiarism, to actively promoting information literacy initiatives. In general, librarians expressed a number of expectations concerning faculty members’ roles in information literacy instruction, including:

- Faculty should take on large (even primary) roles in IL instruction;
Faculty should know library resources, understand the structure of the library and its services, be familiar with library jargon—and be able to teach these things to their students;

- Faculty should prepare feasible assignments that develop basic library skills, foster lifelong learning, provide students with variety, and teach critical thinking; in addition, faculty should teach students such specific skills as: computer literacy; ways to avoid plagiarism; how to distinguish between scholarly and popular journals; and, copyright.

At the same time, several posters recognized that librarians might also learn from the faculty members’ wealth of teaching experiences, and apply this knowledge to their own IL instructional strategies; one poster, for example, noted: “. . . we don’t get a full sense of what course instructors are up against—the depths of confusion, the short cuts students take, the dynamics of a class as a community. Teaching a course helps us figure those things out and it can really help those students that take it.” However, many librarians were adamant in their feelings that within the library, librarians should be in control; for instance, posters seem to agree that library spaces (such as classrooms) should be controlled by the library, not by individual faculty members.
Librarians’ Relationships with Faculty Members

Posters also described a variety of efforts to work with faculty, including developing workshops, and liaising with specific departments. However, as one poster noted, “integration and collaboration [with faculty] are slow, painstaking, and include the slippery terrain of being ‘polite.’” Some concern was expressed about how faculty conduct themselves during classroom instructional sessions (e.g., marking papers or reading while librarians were speaking; going away to conferences when instructional sessions are scheduled), articulating a theme of “faculty as delinquent children.” For example, one poster stated: “the next year she pulled the same thing,” as though faculty are trying to “get away” with some sort of bad behavior when they are absent from or complete other work during instructional sessions. Again, these attitudes are not universal, and some comments indicated that librarians at some institutions have experienced consideration from faculty, who typically give them plenty of notice for instructional sessions.

Faculty Members’ Attitudes and Competencies—What Librarians Have to Say

One other significant theme on the listserv focused on posters’ understandings of faculty members’ personalities. Overall, the image constructed was negative. Teaching faculty were represented as:

- possessive and territorial about their class time, course credits, and “their” students;
- inflexible (i.e., not accepting of any course that is not created or taught by themselves);
- rude, “touchy,” and generally uncooperative;
- emotionally detached from the teaching role;
- in a “rut” or needing “renewal” in their approaches to classroom activities.

One frequent complaint expressed on the list was that faculty “lack vision” by not understanding that library instruction may require more than one 50-minute session. Various posters suggested that librarians should expect “trouble” from teaching faculty, that some faculty have “inappropriate” or “bad” attitudes, that librarians should expect their requests to be ignored (or “blown off”), and that some faculty need to be
“frightened” into “compliance” (by pointing out that familiar library resources are changing or being eliminated). Listserv subscribers were warned not to let themselves be “pushed around” by faculty, so as not to drain librarians’ “emotional survival bank.” Some posters noted that teaching faculty need to be “tricked” into paying attention to the library, by being cajoled with food and a low pressure environment. Although there were some allowances made for younger faculty, who were characterized as being eager to make a good impression and happy for help with instruction, some posters interpreted this enthusiasm as “laziness,” or a sure sign of an instructor trying to “get out of teaching” by letting a librarian run the class. Implicit in these examples is the notion that librarians are dedicated, caring individuals, who continually strive to meet students’ needs—despite their frustrations with faculty members’ questionable attitudes.

While the vast majority of postings were quite negative in their assessments of faculty members’ attitudes, some posters were much more generous in their judgments; positive descriptions referred to faculty members as:

- “reasonable” and “understanding” in terms of IL initiatives;
- having useful knowledge—including expertise regarding students’ class-based resource choices;
- in need of a “break”—due to time constraints, research demands and institutional obligations;
- “grateful” for instruction;
- working on a consensus model of decision-making (which can be, at times, at odds with librarians’ expectations for quick decisions relating to IL instruction).

One poster suggested that faculty ought to be treated with “care” as any colleague deserves. Although the majority of postings provide negative accounts of faculty-librarian interactions, the minority voices that contradict those images provide a hopeful tone to the discussion; that, in better understanding faculty members’ work roles and obligations, librarians may be able to push beyond feelings of frustration and outrage, to find a common ground that will fulfill the goals of most IL programs.

**Perceptions of Faculty Members’ Opinions of Librarians and Their Work**

The listserv postings were filled with assertions about the ways that teaching faculty view librarians and their work. While several posters
stated that some teaching faculty are supportive of their library and its goals, most of the perceptions on the part of librarians were less than positive. Many librarians felt that faculty members:

- do not understand librarians’ work;
- do not appreciate that librarians often cannot provide instruction on an ad hoc basis, as students need it and wander into the library;
- do not see the intellectual content associated with library instruction;
- view library instruction as only tangential to class content;
- see library use as a set of mechanical skills, requiring only average intelligence to master;
- discount the term “information literacy” as ambiguous, or simply library jargon;
- do not respect librarians.

One poster noted that faculty members view the library as an “obstacle which must be dealt with as quickly and painlessly as possible.” Related to this perspective was the point that, “Most faculty seem to view the library as an infrastructural resource and not [as] a learning resource.” The bottom line seems to be the perception that faculty do not understand librarians as librarians understand themselves.

**How Do Librarians See Themselves?**

At the heart of this issue, then, one question remains: How do librarians see themselves in relation to the faculty members on campus? Some posters to the listserv clearly perceived themselves to be full-fledged faculty. Indeed, given the postings that appear on BI-L/ILI-L, it appears that many librarians appreciate being introduced to students as “Professor.” By situating themselves as faculty, librarians perceive that they are able to gain credibility in the eyes of students. As one librarian noted: “I NEVER use the word ‘serve’ when describing what librarians do. I always say ‘support’ the faculty or the curriculum or student research needs. We facilitate, assist, co-teach, but we do not ‘serve’ the faculty.” While this attitude is clearly empowering for librarians, particularly when trying to connect with students and gain legitimacy in the role of teacher, this approach also (even if unintentionally) places faculty as lesser on the meritorious rungs that define their academic work. Faculty members, for example, typically engage in research and service activities—in addition to their teaching responsibilities—and generally hold
doctorate degrees in their areas of specialty. To be equated with librarians, who may not do any research, and who typically hold master’s-level degrees, many faculty may rebel and further strive to define themselves as very different from the librarians on campus. By attempting to gain legitimacy by placing themselves as equals, librarians run the risk of further distancing those faculty with whom they need to connect.

Quite a number of criticisms were leveled at librarians by their own colleagues; the result is a clear indication of the complexity of librarians’ feelings concerning their relationships with faculty. Some posters expressed frustration with peers who:

- do not want to expand their instructional activities beyond the “traditional”;
- are afraid to say no or offend, preferring instead to stick with their perceived public roles as “nice people”;
- are unmotivated (often due to feelings of “overwork and technostress”);
- believe that others see them as on the verge of “extinction” or as “second-class citizens.”

Although one poster noted: “The real enemy is in our ranks,” another was quick to say: “if we constantly cater to faculty, do things on short notice, etc., then we are complicit in devaluing our own time and efforts.” Another stated, “We librarians, along with our colleague professors have failed to instill in our students the joy of real research. We’ve made the whole process look so stuffy and difficult, or else we’ve provided so little real help in our one-shot sessions.”

There were several points of debate, demonstrating a lack of consensus among librarians about some of these issues. For example, some posters were more sanguine about their status on campus: “We reference/instruction librarians are all handmaids to the research process, and the term is neither offensive nor pejorative. I have no problem in considering myself a handmaid, or handmaiden, to the teaching faculty. We perform a service, a necessary service, for them; but we aren’t their peers even though we may have faculty rank or status.” Debate was also evident about whether librarians should train faculty to train students, or train students directly. Additional discussion focused on whether librarians ought to be teaching “computing” literacy, especially word processing.
CONCLUSIONS

The berating of faculty for not being intuitively information literate, or for not taking the time to become information literate is a puzzling attitude—particularly given librarians’ professed mandate to guide users and provide instruction in the use of information resources. However, this attitude may also hold the key to understanding the limitations—and complexities—of the librarian-faculty relationship debate. Both explicitly, and by implication of the expressed attitudes explored here, many librarians on the BI-L/ILI-L list made clear that they generally do not consider faculty members to be their clients—only those faculty members’ students. The images of troublesome, arrogant faculty, who have little understanding of librarians’ roles, point to a problem at the core of the relationship issue: that until librarians embrace faculty as clients themselves, deserving of the same level of respect and support afforded undergraduate and graduate students, IL librarians may continue to fight an uphill battle to bring faculty members onside.

By recognizing that faculty members and librarians are masters of their own (separate, but related) spheres, librarians may make strides in forging respectful and productive working relationships. As well, there are a number of concrete changes that librarians can embrace:

- Try not to presume arrogance, bad intentions, or disrespect on the part of faculty—they are people, just like librarians (or students, or other library clients), and all will have very different attitudes towards librarians and the library;
- Try not to presume that faculty are not committed to IL—or willing to open their classrooms to librarians; they may balk, at first—due to other time constraints or worries about competing institutional agendas—but this does not mean that they are not willing to be involved;
- Try to gain faculty members’ trust, by expressing an understanding of their busy lives; offer to provide help with their research or service work, as one way to gain access to their classrooms;
- Recognize that many faculty did not have the benefit of formal library instruction during their own education and have learned to access the world of information in ways that may appear inefficient and ineffective; over the years they have designed personal library-searching systems that work for them—so try to be patient in guiding faculty members in their use of resources, and be proactive in terms of instructional outreach;

Relationships Between Teaching Faculty and Teaching Librarians

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• Treat faculty as clients of the library—offer to hold instruction sessions for their research assistants, or offer to set up monthly journal alerts.

All of these suggestions attempt to address a core issue, implicit in the postings examined in this study—respect. Librarians clearly desire it, and faculty members are no different. In order for librarians and faculty to work collaboratively in IL programs, both sides need to find a common ground—ways to speak to one another as colleagues, and also as clients-helpers. If librarians can lay the groundwork for building engaging, productive relationships with faculty by first connecting with them in their roles as researchers—the teaching role will soon follow.

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Complex Questions, Evolving Answers: Creating a Multidimensional Assessment Strategy to Build Support for the “Teaching Library”

Paula McMillen
Anne-Marie Deitering

SUMMARY. Since 2001, librarians at Oregon State University’s Valley Library have been working to build a “teaching library” supported by a clearly articulated instruction program. From the start, we believed that we needed to assess the teaching library’s impact, not only to determine the success or failure of our efforts but also to demonstrate the need for intentional, proactive information literacy instruction on our campus. No single assessment tool or method proved adequate to effectively measure student learning happening both inside and outside the library. We describe our evolving, multi-pronged approach to measuring the impact of the library on student learning in the context of current assessment practices in academic libraries and higher education. doi:10.1300/J295v03n01_04
KEYWORDS. Teaching library, assessment, collaboration, library instruction, information literacy, learning outcomes, student learning

INTRODUCTION

Since 2001, librarians at Oregon State University’s Valley Library have been pursuing the vision and goals of a “teaching library”: articulating institution-relevant standards for student learning; developing strategies to move theory and practice of information literacy (IL) instruction forward; and building active partnerships to implement those strategies and reach those goals across campus. From our initial brainstorming up to the present iteration, our version of the teaching library has included assessment of student learning as an essential thread, and collaboration with faculty and student programs as an essential strategy.

In this article we will review the state of assessment in libraries, particularly with regard to student learning outcomes and the challenges posed by the academic library’s unique position in the university’s teaching framework. We will describe the evolution of our assessment efforts as we seek to measure the overall impact of our instruction program. And we hope to offer some ideas that others can use in designing and implementing their own programs of evaluation.

WHERE WE STARTED

Although assessment has been a part of our instructional efforts for many years, our tools and tactics have been variable in their effectiveness and intentionality. In 2000, the Oregon State University (OSU) Library’s Instruction Workgroup (IWG) responded to the publication of the ACRL Information Literacy Competency Standards for Higher Education (ACRL ILCS) by doing a self-study of current practice and teaching priorities among our instruction librarians (Davidson et al., 2002). In early 2001, the Workgroup drafted a vision statement articulating a new mission for the library’s instruction program and a work
plan to make it happen. Each of the four goals outlined in this plan included elements of assessment. These included: (1) an internal evaluation of the instructional program and assessment tools; (2) an examination of the library faculty’s knowledge and skills in pedagogy; (3) ongoing assessment of teaching effectiveness; and (4) assessment of information literacy concepts and skills among our students.

In 2001, as now, the bulk of our instruction was conducted at the invitation of non-library faculty in one-time class contacts, with the exception of four one-credit classes associated with particular disciplines. The evaluations used for these one-shot instruction sessions do not address student learning and ask about only limited aspects of teaching effectiveness; they are largely satisfaction surveys completed by students and the faculty member at the end of the session. These evaluation forms are still a concern, and will be discussed in more depth below. We asked the instruction librarians where they needed additional training with regard to teaching, and at the same time we set out to identify tools and procedures to use in assessment.

From the start, we realized that to assess student learning we needed institutional involvement outside the library. Iannuzzi (1999) points out that the meaningful assessment of instruction also extends far beyond coordination between the reference librarian and the individual faculty members, and beyond the library instruction coordinator talking to department chairs. Strategies at this level require a library culture for information literacy strong enough to influence a campus culture, and this begins with the senior administrators at our libraries and on our campuses. (p. 305)

In other words, we knew that to make the case for a teaching library to library administration and university administration, we could not continue to rely exclusively upon the efforts of individual liaison librarians. Given the inconsistent level of support for information literacy that existed at the time, across campus and in the library, we knew that we would need compelling evidence to make this a priority for everyone. We not only needed to demonstrate the significance of information literacy as a campus-wide academic goal, we also had to show that the undergraduate curriculum was not helping students achieve that goal. This meant we needed to assess the impact of research instruction on all of our students, not just those who attended library instruction sessions. Reaching our vision for instruction program assessment would clearly take a significant effort.
It seemed clear that our work would save us effort in the long run. Library faculty were increasingly frustrated with the Sisyphean nature of our teaching approach; we kept rolling the same rock up the hill, teaching similar concepts to first year students and seniors because we had no objective way to measure student competency levels. Our subjective impressions suggested that upper division and graduate students did not have noticeably better conceptual and skill levels than the lower division students. We wanted to use our energy more effectively. Articulating our work plan focused our energy toward developing solutions.

The reference and instruction faculty and staff attended a series of retreats in 2001-02 which produced our first articulation of the teaching library. We envisioned two main target audiences for library resources and services. The teaching library would focus on the learning and resource needs of lower-division undergraduate students. Its counterpart, the “research library,” would provide parallel emphasis on upper-division undergraduates, graduate students and faculty in the disciplines. The teaching library also called for a formalized instruction coordinator position; this person would have the responsibility for managing instruction with unaffiliated lower division courses, with assessing the effectiveness of instruction overall, and with guiding the implementation of the strategies already outlined in the Instruction Program work plan. While this vision has not been fully realized, it has been important. It provided a backbone for the evolution of the library’s instruction program, and it also provided additional incentive for OSU librarians to forge partnerships with other departments on campus.

**ASSESSMENT: WHY IS IT SO ELUSIVE?**

It’s all about numbers, isn’t it? And libraries are very good at the numbers game, using statistics to document activity levels (e.g., student contact hours, circulation and ILL statistics) and as indicators of quality (e.g., staff to student ratios, number of volumes in the collection). Admission to the Association for Research Libraries, the gold standard for academic libraries, is based almost exclusively on numbers. In 2002, Dugan and Hernon described this approach to assessment as “looking at user communities from the perspective of the library” (p. 376). The library counts what it has and what it does, and uses those numbers to draw conclusions about how well it serves its users.

In recent years, Dugan and Hernon (2002) argue, this view of assessment has been joined by two others. A second strategy looks at the “library
from the ‘customers’ perspective’” (p. 376). Marketing derived approaches, such as Total Quality Management, examine library services from the customers’ point of view and focus on the “‘building-in’ of opportunities for evaluation of services,” (Meulemans, 2002, p. 65). LibQUAL+ is an example of the customer-satisfaction approach to assessment. By gathering customer-focused data and counting inputs and outputs, libraries can paint an important part of the assessment picture.

It is the third perspective described by Dugan and Hernon (2002), however, that is the most critical in stating the case for the teaching library. Assessment of this third type measures the impact of the library “on the life of the institution” (p. 376). If the core goal of the university, the “life of the institution,” is student learning, then the library must clearly demonstrate the impact that it has on that goal. This cannot be accomplished solely by counting inputs, or by gathering satisfaction surveys. These measures can ensure that the pieces for learning are in place, but they cannot tell us if learning happens. To do this the library must shift its focus away from what it teaches and find ways to measure what students learn.

This shift reflects a larger contextual shift in higher education. It was previously assumed that if services and resources were adequate, then learning would happen. This assumption started to break down in the 1980s with several sobering reports that made the case for ongoing assessment in education. Reports such as A Nation at Risk (1983), Integrity in the College Curriculum (1985), and Time for Results (1986) all suggested that the American education community could not presume that learning was automatically happening, even in the best of colleges and universities. These reports inspired calls for reform which were notable, initially, for their lack of attention to the role of accreditation in the assessment process. In 1988, however, the U. S. Department of Education called for accrediting agencies to re-focus their standards for accreditation on “educational effectiveness.” By the early 21st century, to meet these revised standards, colleges and universities needed to show that they had developed ways to measure student learning in the classroom and throughout the campus (Black & Kline, 2002; Meulemans, 2002).

In her content analysis of accrediting agency standards, Gratch-Lindauer (2002) points out that most now include explicit information literacy components. She suggests that academic libraries can play a major role in this new paradigm by “developing clear student learning objectives for information literacy skills; assessing the progress and achievement of these objectives; and showing how the outcomes are
used to improve student learning” (p. 19). The shift towards learning-focused assessment is also reflected in university strategic initiatives and mission statements, which have pushed libraries to follow suit by developing similar documents that support larger institutional learning goals (Meulemans, 2002).

Previous surveys of the literature have found minimal evidence that evaluation in library instruction programs includes meaningful assessment of student learning (Ragains, 1997; Colborn, 1998; Warner, 2003). In his survey of 44 academic library instruction coordinators, Ragains (1997) concluded that their most frequently gathered assessment data is “reaction data” such as student or faculty satisfaction surveys. Such “subjective data alone are inadequate to measure student learning, guide programmatic improvements in library instruction, or be used as a basis for librarians’ performance appraisals” (p. 159). There are probably several factors in play here. Unless they have a specific background in education, most instruction librarians are more familiar with assessing discrete skills and bits of knowledge than measuring conceptual learning or the transfer of knowledge from one setting to another. Librarians, like their peers in higher education, seldom receive formal training in instructional design as a required part of their graduate study.

As a profession, librarianship has not fully developed the tools and practical applications to help librarians measure students’ information competence. Colborn (1998) identifies the lack of standardized tests, credit courses, and clear objectives as barriers to effective assessment of student learning. Progress has been made, most notably with the publication of the ACRL ILCS in 2000. According to Meulemans (2002), this has been the most significant factor contributing to the increased emphasis on assessment in library instruction. Recent reviews of the literature suggest that, while librarians’ understanding of the theory of assessment may have improved, not much has changed for the better in practice. After reviewing 20 years of the literature on assessment in libraries, Warner (2003) concluded that most of the instruments used to gather data in libraries focus on subjective impressions of the presentation skills of library instructors. These surveys and questionnaires simply are not up to the task of gathering useful data about student learning. Publication of the ACRL ILCS has moved the library profession forward by providing a powerful tool for framing student learning outcomes, but we still have a long way to go in translating these standards into outcomes that facilitate practical means to determine our impact on learning.
THE CHALLENGE OF THE ONE-SHOT

At OSU, moving beyond the one-shot session, the Sisyphean rock of library instruction, was a strong argument for a teaching library that would support a strategic, curriculum-integrated library instruction program. At the same time, the one-shot format itself, with its inherent limitations, added an extra level of challenge as we worked to design an assessment strategy that would effectively measure student learning throughout the curriculum. To accurately measure students’ information literacy, it is not enough for librarians to assess library instruction sessions, particularly one-shot sessions. It does not matter how effective the librarian teacher is, the simple truth remains that students do not do all of their learning about their research topics, or even all of their learning about research and information, in these sessions. We came to understand that we needed to combine a variety of assessment strategies, looking both inside and outside the library.

The amount and type of learning that can happen in a one-shot session is severely restricted by time, and by the expectations of the classroom faculty and students. Students can learn a very limited amount about information structure, access and use in a single session, even if we limit our consideration to the learning necessary for a discrete project. A study by Warner (2003) found that after four library sessions, done in collaboration with Communications faculty, students still were confused about some of the most basic concepts covered.

Furthermore, librarians usually have little control over the instructional emphasis of one-shot sessions. In most cases, classroom faculty come to the librarian with a list of topics they want covered. Librarians have even less influence over assessment of actual learning. Students and faculty alike often come to library instruction sessions with vague and unrealistic expectations. Most librarians will recognize this situation: the faculty member who sends an e-mail asking for the librarian to “please teach my students how to find scholarly articles,” or “please teach my students to use MEDLINE.” The emphasis in these cases is on skills, not concepts or contexts. Even if librarians could determine the class content, the fact remains that the short amount of time available makes it difficult to assess conceptual learning in any meaningful way.

Because of these barriers, most assessment of one-shot sessions focuses on librarian performance and student satisfaction, not learning. Ragains (1997) found in his survey that most assessments of one-shot sessions occur at the end of the session before the class is dismissed. He notes that “Collecting evaluative data soon after an instructional session
may increase the number of responses, but tends to limit the information collected to comments about the style and organization of the librarian’s presentation” (p. 165). It is especially clear that such end-of-session assessments tell us nothing about whether or not students retain what they have learned or if they can transfer those concepts and skills to new projects, subjects, and situations. Ragains argues that single sessions are most legitimately utilized for formative/developmental activities such as building teaching skills through team teaching and peer feedback; additionally they can certainly work to build faculty-librarian relationships. He goes on to say that, given the highly artificial and externally prescribed nature of the vast majority of library instruction (i.e., one-shot guest lectures), efforts to assess instruction at this level actually do more harm than good–for the individual librarian’s professional development, for the perception and reputation of the library on campus, and perhaps for the profession as a whole.

COLLABORATION: BARRIER OR NECESSITY?

It may be tempting for librarians to assert more control over the learning process, and by extension the assessment process, by taking over more teaching responsibilities themselves. Kempcke (2002) points out that this is not a scalable approach for most institutions.

While Hardesty, Farber et al. recognize and highlight advances in library instruction, I would suggest that their cultural view from their seats at small liberal arts colleges is not applicable at larger institutions and we should stop trying to emulate the standards they set. The more complex political climate, the extended bureaucracies, the myriad of course offerings and degree programs, and the sheer numbers and variety of the student population make the development of truly comprehensive IL programs at large universities difficult at best. Collaboration? Partnerships? Fine. It’s not enough. What’s next? We cannot keep repeating the same worn out mantra. Even the best collaborative efforts described in the literature reach a relatively small group of students. On large campuses, it is impossible for librarians to teach IL to all students. That is why it is so important to weave IL into the curriculum. (p. 542)
At OSU, we concluded that the difficulties inherent in developing a strategic, effective information literacy instruction program using the model of one-shot sessions and individual collaborations make it imperative that information literacy be deeply embedded into the curriculum at the program, department, college and university level. In other words, our teaching library would rely on campus-wide collaboration.

This level of collaboration, however, adds another level of complexity to the assessment picture. If librarians share responsibility for delivering research instruction with campus partners, we must also share the responsibility for assessing what our students can do with information. As Iannuzzi (1999) points out, “assessment is difficult because libraries cannot do it alone” (p. 304). To effectively measure the impact of a library instruction program on the “life of the institution” the strategies for assessment need to be strategic, and campus-wide.

In general, assessment in higher education is becoming an increasingly collaborative effort. Accrediting agencies, colleges and universities alike recognize that enriching learning experiences happen both inside and outside of the classroom. To truly measure the institution’s impact on student learning, they must find ways to capture and measure the learning that happens in libraries, residence halls, student unions, and other co-curricular spaces. As the American Association for Higher Education noted in its Principles of Good Practice in Assessing Student Learning (1996), librarians, students, student affairs professionals, and administrators must be just as involved in assessment efforts as classroom faculty or assessment experts.

In this context, it becomes clear that there are two dimensions to Dugan and Hernon’s third perspective on assessment. First, the academic library must derive its goals, mission, and vision from those of the college or university as a whole (Fraser et al., 2002). Secondly, its assessment efforts should measure the impact of its contributions to institutional goals (Flynn et al., 2003). While the library’s contributions can be narrowly conceptualized, they do not have to be. For example, OSU Libraries’ strategic goals broadly define the role of the libraries as partners in the learning mission of the university when they call for the OSU Libraries to contribute to “the academic success and the lifelong learning of OSU students,” and to take “a leadership role in promoting information literacy as an academic goal of OSU” (Oregon State University Libraries, 2004). The more broadly an academic library’s outcomes are conceptualized, the more important it is that these outcomes be developed collaboratively with campus partners (Flynn et al., 2003).
OSU’S MULTIDIMENSIONAL ASSESSMENT STRATEGY

At OSU, we found that a multidimensional assessment strategy was needed to effectively measure our impact on the life of the university. Like so much in our conception of the teaching library, this stage of the process requires collaboration and partnerships. Baker (2002) points out that accreditation commissions encourage higher education institutions to gather data from a variety of sources, using a variety of methods. It is crucial that each institution define goals that reflect its unique mission and environment, and that the strategies developed to gather evidence of student learning should be similarly tailored to the particular goals and needs of the institution.

To create a plan that would allow us to measure the impact of the OSU Library’s instruction program on student learning campus-wide, we needed to combine a variety of methods into a multidimensional assessment strategy. The assessment strategy articulated with the initial vision for the teaching library was intended not only to help us build a strategic and effective library instruction program, but also to provide data that would demonstrate the need for the teaching library on campus. Four main components went into this plan: (1) a theoretical framework; (2) measurable standards and learning outcomes; (3) standardized tools for gathering quantitative data; and (4) methods for gathering qualitative data. The framework we developed would lend coherence to the information literacy program, allowing us to combine a variety of delivery and assessment methods under one umbrella. The standards were developed collaboratively, and articulated campus-wide goals for information-literate students. To measure progress towards these standards, we combined qualitative and quantitative methods of gathering data.

Framework: A Conversational Metaphor

Our approach for teaching—and assessing—information literacy can be characterized as conversational and collaborative. With our earliest programmatic efforts we elected to go beyond teaching English Composition (Writing 121) students basic search skills and instead focus on engaging them in a research conversation. This was philosophically and politically motivated. We strongly believe in the information literacy standards, which advocate critical thinking about information. At the heart of our model is the conviction that all students, regardless of their major, must learn that scholarly research is more than simple fact collecting. Instead, it is a complex, recursive process that requires them to
learn new things from the information they find. As part of this process, therefore, they must find good sources, and communicate what they have learned to others. This ability to modify and expand one’s knowledge base in response to new information is necessary to lifelong learning, and also provides a solid basis from which students can learn advanced research skills in particular disciplines. This model of scholarly research resonated strongly with the English department’s composition program coordinators who teach a similarly iterative and rhetorically framed method of writing.

Drawing upon the cross-disciplinary perspective of Barbara Fister and the information-seeking model of Carol Kuhlthau, one of our instruction librarians, working with a faculty member in the University Honors College, developed and implemented a rhetorical framework for research-based writing (i.e., speaker, audience, message—in cultural and historical context) with selected Honors College writing classes (Davidson & Crateau, 1998). The collaboration with the Writing 121 program was our first attempt to make this rhetorical approach a more systematic part of our instruction program (McMillen et al., 2002). Based on learning goals mutually defined by library instructors and composition coordinators, we selected indicators from the ACRL standards that were appropriate for the introductory level of these classes, and designed a series of assignments to address specific learning outcomes for each. At the end of the collaboration’s first year, the library instruction coordinator and the composition coordinator conducted a rubric-based assessment of students’ research papers in Writing 121. We found that this rhetorical stance in relation to information resources seemed to be the most difficult conceptual portion for students to integrate.

To address this, we developed a more explicit “conversational metaphor” for the research writing process (McMillen & Hill, 2004). We introduced this metaphor to the Writing 121 instructors (graduate students in the English department) and the library instructors in orientation sessions. This metaphor is based on conversation as a familiar activity for students which involves consideration of the context, point of view, and credibility of the speaker. It asks students to first “eavesdrop” on the conversation, engage with the sources and then enter the conversation through their own contributions. It draws from the literature of both the rhetoric and composition field and information literacy, is designed to facilitate speaking across the dialects of subject disciplines (as students will have to do in their college careers), and works from a shared set of easily accessible ideas and terminology.
Standards: Undergraduate Information Literacy Competencies

In the summer of 2004, the IWG revised the library assignments and instruction sessions in Writing 121. Drawing upon the research and data gathered in the process of creating the conversational metaphor, the IWG crafted measurable learning outcomes, and designed activities based on those outcomes, to introduce each stage of the recursive research process. Because the conversational metaphor for research was collaboratively derived, mutual agreement upon outcomes for the research skills curriculum was straightforward. The success of this collaboration shaped the IWG’s approach to their next major task: articulating a set of information literacy standards that would support the campus goals of promoting student success and lifelong learning.

Using the ACRL *ILCS* as the departure point, the IWG identified a set of core concepts and skills. The ultimate goal was to present a coherent picture of an information-literate student that would resonate with teaching librarians, classroom faculty and co-curricular partners representing a wide range of campus programs. The resulting draft outlined four primary competencies (see Figure 1).

**FIGURE 1. OSU Libraries Undergraduate Information Literacy Competencies**

1. Recognizes when information is needed
   Successful learners recognize gaps in their knowledge, and seek out information to fill those gaps. Successful learners are aware of the wide variety of information sources available to them, and they understand the social, political, legal and economic contexts in which information is produced.

2. Finds information efficiently
   Successful learners know that different kinds of information sources can be retrieved in different ways, and that there are a variety of tools to help them. They find information quickly and effectively because they know how information retrieval tools work, and they use that knowledge to design effective search strategies. They can troubleshoot unproductive searches. They know when to persevere, when to ask for help, and where that help is available.

3. Learns from information gathered
   Successful learners analyze and question the sources they find, choosing the most effective information sources for their needs and integrating the information from those sources into their own knowledge base to achieve new levels of understanding.

4. Uses information effectively and ethically
   Successful learners consider their purpose, their message, the resources available to them, and the needs of their intended audience to organize and communicate their information effectively and responsibly.

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At this point, the draft document was presented to all of the reference and instruction librarians for input. After a two-month conversation, a rewritten draft was approved by the reference librarians. We were ready to take the competencies to the rest of the campus.

The IWG gathered input from campus partners in two ways. First, we planned and facilitated three focus groups with classroom faculty. At the same time, we invited program heads, assessment experts, and people working with special populations of students to talk to us about the competencies in a series of individual conversations. The dialogue generated by the focus groups and the individual meetings was valuable in two equally important ways. First, these conversations showed that introducing students to the recursive research process described by the conversational metaphor was a goal we shared with classroom faculty and with all departments concerned with student success, engagement, and retention. It was crucial to our collaborative process that information literacy be understood as a shared goal. Secondly, we gathered valuable feedback about the specific competencies and examples, allowing us to articulate these shared goals in ways that were especially meaningful to our campus partners. The revised competencies were adopted by the library in August 2005 (OSU Undergraduate Information Literacy Competencies, 2005).

The second phase of this process is in progress now: articulating and mapping measurable learning outcomes based on these competencies. Initially, the IWG planned to map the outcomes to the undergraduate curriculum as a first step in strategically planning the libraries’ instruction program. Information gathered during the process of creating the competencies made it clear that a second map that organized learning outcomes by Bloom’s Revised Taxonomy (Bloom, 1984), reflecting different cognitive skills, would be more useful to teaching faculty outside the library. Both maps are currently being developed.

**Tools for Gathering Quantitative Data: Project SAILS**

One of our earliest stated assessment goals was to develop or find a good tool that would allow us to assess the IL competencies of large numbers of students. Our survey of the literature showed that virtually none of the published information about assessment described such a tool. Even those studies which purported to measure students’ information literacy were usually institution specific (i.e., referred to tools, buildings, and other resources that only those affiliated with the institution could be expected to know about), and none had tackled the thorny
psychometric issues of validity and reliability, issues which in general have been lacking from the discussion in the library assessment literature. In March 2001, Kent State University (KSU) Libraries went public with their effort to address exactly these gaps in a presentation at the national meeting of the Association of College & Research Libraries in 2001. “We envisioned a standardized tool that is valid and reliable; contains items not specific to a particular institution or library but rather assesses at an institutional level; is easily administered; and provides for both external and internal benchmarking” (About Project SAILS, 2006). Because this tool offered the potential to address some important gaps in our assessment strategy, the OSU instruction coordinator contacted Kent State as soon as it became clear that they were interested in working with outside institutions. We integrated the developing SAILS instrument into our new collaboration with English composition. The library agreed to teach two library sessions for each section of 25 students and the Writing 121 coordinator agreed to let us include the Web-based version of KSU’s assessment instrument as a pre-library session assignment. KSU would benefit by getting the responses of approximately 2,500 students per year to help them refine their tool.

We wanted to accomplish several things by participating in what came to be known as Project SAILS (Standardized Assessment of Information Literacy Skills). We hoped to establish a baseline against which we could measure the impact of the collaboration with English composition. By assessing a cohort of seniors (outside the Writing 121 classes) we wanted to determine if the undergraduate curriculum was improving the information literacy skills of its graduates already, i.e., without the library’s instruction efforts. We also planned a future project, sampling seniors four years after the collaboration with Writing 121 began, hoping to identify changes that might be the result of library instruction. We didn’t intend to rely on this information exclusively but felt a psychometrically sound measure would be a strong piece of evidence, which could be used in conversations with library and university administration, about the importance of IL competency as an educational goal.

Tools for Gathering Qualitative Data: Focus Groups

The Harvard Writing Project video, Shaped by Writing: The Undergraduate Experience (2002), inspired our thinking about how to supplement the quantitative data gathered with qualitative information. The Harvard Writing Project examined how engaging with a recursive writing process—one that strongly resembled the recursive research process
defined by our conversational metaphor—affected student learning at Harvard. Harvard’s study was enriched by data reflecting students’ own attitudes and feelings about their experiences with writing (Sommers & Saltz, 2004). We wanted to gather similar data about OSU students’ research experiences. For a variety of reasons, we chose focus groups as our method for collecting qualitative data.

Originally developed to serve business marketing needs, focus groups have been embraced by the social sciences and are making numerous inroads into libraries’ planning and evaluation efforts. They have become a sufficiently useful tool to stimulate programs at ALA (Nolan, 2006) and to generate the development of data analysis software (Von Seggern & Young, 2003). Libraries are using focus groups to add qualitative richness to the more commonly used quantitative analyses supported by routinely collected statistics, and also to gather information on less easily quantifiable processes and perceptions.

First, focus groups are particularly useful to examine groups of people and their reaction to shared experiences, services and activities. Focus groups are structured as conversations and not as simple question-and-answer sessions, and thus offer the opportunity to gather richer data than can be elicited from one-on-one interviews or qualitative surveys. Consequently, they are also frequently used to supplement and/or validate the findings from quantitative measures (Krueger, 2000). In the arena of library assessment, for example, focus group information has been used to supplement the findings from LibQUAL+ (Forrest & Williamson, 2003).

Additional advantages of a well-run focus group are that the conversational structure can help participants draw connections and analyze their experiences more deeply than they might as individuals. The safety offered by a group conversation can also be beneficial to participants who might be uncomfortable criticizing institutions or authority figures. Finally, the group conversation model can help the researcher examine topics and processes more complex than can easily be captured in a survey or through a questionnaire (Krueger, 2000). Libraries have capitalized on these advantages by using focus groups to better understand students’ information gathering/research processes (Seiden et al., 1997; Valentine, 1993). The knowledge gained from focus groups has been used to guide libraries’ instructional and outreach efforts, purchasing decisions, and circulation policies (e.g., Carter, 2002; Warnken et al., 1992). Over the past five years, OSU Libraries have successfully used focus groups for usability testing of Web-based resources and
instruction materials, and as a key part of our overall strategic planning process.

A final reason we chose to do focus groups was our desire to build on our collaboration with the university’s Writing Intensive Curriculum (WIC) program. We realized that the quantitative data provided by SAILS offered only cohort-level information and that we were missing some potentially significant feedback about how students perceived their research and writing preparation at OSU.

RESULTS

While it is ideal to be able to plan a comprehensive assessment strategy and then systematically implement it, we rarely have the luxury in libraries to engage in a lengthy planning process. Our vision of the teaching library as a highly collaborative framework leading the implementation of information literacy throughout the curriculum made it even more impossible to carefully plan everything out before acting. Our experience has shown us that by emphasizing assessment as a key part of the teaching library from the start, we have been able to identify opportunities and strategies as our conceptions and implementation evolved.

In our initial conversations about the teaching library, two strategic opportunities to address information literacy learning outcomes were identified within the curriculum: the Writing 121 program, and the Writing Intensive Curriculum (WIC). Through ongoing collaborative efforts, instruction and assessment activities have been successfully implemented in both of these programs.

When the curriculum for the research skills portion of Writing 121 was redefined in 2004, we used the framework, standards, and tools described above. The conversation metaphor was more explicitly integrated into redesigned research log assignments, which are now worth 10% of the students’ final course grade in Writing 121. Assessment of the logs is again based on a rubric, which is openly shared with students. Information gathered during these assessments has been used to refine the Writing 121 curriculum further in each of the last four terms.

We have also used the Project SAILS instrument to gather quantitative data from Writing 121 students before they receive any library instruction. We were the first institution outside of KSU to administer the instrument and were essentially a Beta test site for outside use, collecting data a year before the project received grant funding or began formally
collecting data from multiple institutions in Phase I. We have been gathering baseline data on our incoming students for four years, from 2001-2002 until 2004-2005. This baseline data was supplemented by data gathered from cohorts of seniors in the spring of 2002 and 2005.

We knew about some limitations when we began using SAILS, and we discovered many more along the way that have significantly restricted the conclusions we have been able to draw from this data. We knew ahead of time that we would have no way to track or insure that the same students we tested in the first year would be those re-tested four years later. We hoped that the samples would be large enough to allow us to draw some reasonable inferences.

We were less prepared for the extensive changes to the SAILS instrument itself. In hindsight, perhaps this shouldn’t have been a surprise since we were aware that the instrument was still under development. At the outset, we didn’t fully understand that the changes from year-to-year would limit our ability to compare cohort results to the extent that they did. Many items were dropped and added as it was determined which ones provided the best discriminatory power and so the item make-up of the four ACRL standards being assessed changed. As the project progressed, the SAILS leadership’s own analytical approaches evolved and so the reports generated in the formal phases of testing weren’t available for our earliest cohorts of students. In fact, we didn’t receive the results from our 2002-2003 cohorts until 2006 because these had to be done “by hand” outside the regular assessment mechanism that was being used in the latter stages of the project. To date, we still haven’t received the final data analysis for our most recent senior cohort (2005).

Some data is available; however, it is still unclear what conclusions we can draw. On Standards I, II, and III (the only ones available for our earlier cohort of seniors), we find the mean scores are actually lower for the 2005 cohort than for the 2002 cohort on all three standards. Because the 2005 seniors were surveyed after research instruction was integrated in the Writing 121 curriculum, it might seem as if these numbers could inform conclusions about the effectiveness of that instruction. What we do not know about these seniors, however, makes this problematic. We do not know how many of them took Writing 121 at OSU, we do not know how many of them received any research instruction in any class, and we do not know how many opportunities they had to do research while at OSU.

Even given these limitations, the potential value of quantitative data in making a case for the teaching library is clear. If the numbers gathered
in 2005 do accurately reflect the general state of IL competencies for seniors, we could argue that additional information literacy instruction is going to be required beyond and/or in addition to Writing 121 before it has a measurable impact on student performance.

A second preliminary comparison we can make from the available data is between the 2005 freshman and senior levels of performance on the 12 discrete skill sets derived from the SAILS instrument. With the exception of Skill Set 9, Retrieving Sources, our seniors performed at nearly the same level and in some cases, somewhat worse, based on mean scores. They were apparently more knowledgeable about retrieving sources. Since no one has yet defined what level of SAILS performance constitutes information literacy, we can’t conclude that this is necessarily a problem, but the data does suggest that OSU students’ experience as presently structured is not significantly increasing their information literacy. This information could potentially be combined with data gathered by our partners in Student Affairs through the National Survey of Student Engagement (NSSE) and/or with the findings from our own focus groups.

The limitations of the SAILS analyses we have received to date only reinforce the need for qualitative data gathering as part of a multidimensional assessment strategy. The numbers can suggest a great deal about our students’ skills, but in order to understand how particular learning experiences have shaped those skills more information is needed. This is particularly true for the SAILS data because it only provides cohort-level information, so we can’t measure individual student learning with this instrument.

With funding support from the WIC program and from library administration, we planned a series of focus groups with seniors in spring 2005. We developed our stimulus questions in collaboration with the WIC program coordinator. We solicited volunteers from two graduate Education programs (Adult Education and College Student Services Administration) to be trained as facilitators for the groups. Participants were solicited from the cohort of seniors who completed the SAILS survey that spring. We had hoped to recruit graduating seniors in the middle of their last (10 week) term at OSU. After some delays in the institutional review board process, we were not able to schedule the focus groups until the end of the term. We were therefore only able to recruit 27 students to attend the 90-minute conversations. In most cases, we successfully created separate focus groups for science majors and for those who majored in the social sciences or humanities.
Less than half (47%) of the focus group participants had taken Writing 121 at OSU. The rest met their basic writing requirement with Advanced Placement credit, or by transferring credits from other institutions (in most cases, from community colleges or high schools). Research instruction was not always a requirement in these alternative courses, which has significant implications for our instruction program. No matter how effective the Writing 121 collaboration is, it will not be adequate if more than half of our students never take it.

The preliminary data from the focus groups confirms that this method produces very rich insights into the impact of research and writing experiences on undergraduate learning. Our experience, unfortunately, also illustrates some of the challenges of focus groups as an assessment method. Because videotaping can have a stifling effect on focus group conversation, we chose to audiotape the sessions as a less intrusive alternative. Multi-voice conversations are very difficult to transcribe from an audiotape, which forced an unexpected delay with the analysis. Ideally, a professional transcriber, with focus-group experience, should be hired. We also used facilitators from outside the library to moderate the groups. This made it possible for us to schedule several groups on the same day, and it was intended to preserve an atmosphere of neutrality within the groups. Not being present during the conversations, however, means that we are completely dependent on the transcriptions for our data. In addition, the facilitators may vary widely in quality, which can compromise the integrity of the data gathered from some of the groups.

Preliminary themes discussed in the focus groups illustrate the value of this type of data for programmatic assessment. For example, several students expressed the idea that they were successful doing research but that they had had to learn too much on their own. Students perceive that faculty members have clear standards for evaluating students’ research and writing, but that they do not always communicate those standards, before or after research projects are done. Students feel that after they leave the structured experience of high school, they are left to learn college research by trial and error. Several students said that they felt that their instructors assumed students should know how to do college-level research already, and therefore didn’t provide direct instruction or feedback. All of the students said that they had the opportunity to do at least some projects that required research while they were at OSU. They were proud of what they had been able to do, and enjoyed the opportunity to figure out how to produce their own analyses.
Students also felt that they needed more guidance about how to find sources, and how to identify quality sources. Many experienced difficulty finding information in the library. Most students were comfortable with Web-based research and felt that they could find current information on the Internet. There was no indication that students received negative feedback about the sources they found; in fact, many said that the feedback they received on papers did not extend to their sources at all.

These results, while extremely preliminary and anecdotal, suggest that the focus group data may provide a powerful tool for building the case for a teaching library that includes collaborative instruction and curriculum-integrated information literacy outcomes.

**FUTURE DIRECTIONS**

We have come far in our efforts to build information literacy instruction and assessment into the Oregon State University curriculum, but we still have a long way to go. OSU’s instruction librarians have led the charge, within the library and across campus, to promote information literacy as an important item in the educational agenda. Although the OSU *Strategic Plan for the 21st Century* states that “At no time in our history has the ability to absorb, understand and evaluate information been so important” (Oregon State University, 2004, p. 1), there is currently no formal statement regarding the value of or need for IL competencies for which colleges and departments are held accountable.

Due in large part to the continuing advocacy of library instruction faculty, information literacy is now prominently reflected in the OSU Libraries’ mission and vision statements. In addition, one of the three goals outlined by the libraries’ strategic plan focuses entirely on information literacy and lifelong learning. A subject librarian position was re-visioned into a position focusing on undergraduate learning and assessment. Concerted efforts by subject liaisons, the Undergraduate Services Librarian, and the Instruction Workgroup are raising the awareness among key student programs and general faculty about the library’s investment in what was already a shared, and is now a more clearly articulated, set of desired learning outcomes.

Some future directions for assessment have already been suggested above. It has yet to be determined to what extent the results of our Project SAILS assessments can usefully inform the refinement of information literacy instruction. Some of the limitations described above may be corrected when new versions of the instrument allow us to define more
precisely what kind of research experience the responding students have had. Particularly promising are the more fine-grained results of the skill sets. It seems likely that the evidence is there to support a claim that students are not significantly improving most of their IL competencies through the current undergraduate curriculum. In the best of all worlds, this apparent lack of progress can increase the importance of IL competency as an educational priority for OSU and add motivation to infuse IL instruction more systematically into the undergraduate curriculum, both in general education courses and in required course sequences in the departments.

To definitively use this tool to assess the library instruction program’s effectiveness, we will have to take advantage of new options for identifying specific groups when SAILS administration resumes in fall 2006. This would require again sampling seniors with analyses discriminating those who have completed Writing 121 at OSU and those who have been exposed to differing levels of library instruction during their undergraduate career (e.g., how many library instruction sessions have they had and at what levels). Because we have only recently obtained data which would allow comparison between seniors and first-year students, we are still in the planning stages for sharing this information with a range of audiences associated with the library (e.g., the Faculty Senate Library Committee) and audiences across campus (e.g., the Dean’s Council). There is also the potential for combining the SAILS data with other large-scale analyses of student learning and student engagement.

Focus group data promises to offer valuable feedback on student perceptions of the research and writing instruction they have received as undergraduates. We also hope to use the focus group findings to enrich our understanding of the quantitative SAILS data gathered from seniors. In particular, it is desirable to look at self-perception versus actual knowledge and performance measures. Maughan’s (2001) series of assessments with seniors found that students routinely evaluate themselves as being more information-literate than measures of performance warrant. Again, there are numerous potential audiences including those responsible for assessment efforts on campus and for student retention.

Collaborating with the WIC program on our 2005 focus groups provided us with the opportunity to gather data not only on the impact of research instruction, but also on the impact of research and writing on learning. Similar collaborations with other partners in Student Affairs and Academic Programs offer similar potential. One could argue that a more generalized exit interview of seniors would be extremely useful.
for refocusing campus priorities and reaching OSU’s stated goals of providing a compelling learning experience and preparing lifelong learners.

To this point, we have described how we will develop the collaborative data gathering efforts already underway. We also intend to combine these with classroom- and course-level assessments of research instruction. Ideally, we would like to be able to capture learning assessments for instruction delivered in-person, by classroom faculty, or online. The outcomes mapping project described above will provide additional tools for this effort. Over the last year, the reference and instruction department has been working on creating a suite of classroom assessment tools, online learning tools, and other instructional materials that address the competencies. Now, we need to build these assessments into our evaluation project.

For years, we have been using a generic satisfaction survey after instruction sessions, which does not provide any meaningful data about student learning. The IWG needs to develop a way for librarians to collect and manage learning assessment data on the direct and indirect instruction they do. While we will never capture assignment- or course-level assessment data for all of the research instruction done in the curriculum, we also intend to share the mechanisms we develop with classroom faculty via workshops through the new Center for Teaching and Learning, and communications between departments and their library liaisons.

Finally, we need to get more systematic and strategic impact out of the partnerships we already have in the curriculum. We already utilize informal student feedback as well as actual rubric-based scores on the research logs to continually refine the library assignments in Writing 121, the foundation course of our information literacy instruction efforts. We need to systematically review these logs rather than rely on the piecemeal process currently in place to create a more coherent picture of where students are encountering the most difficulty. Both the Writing 121 instructors themselves and the library’s liaison to the Writing 121 program share their observations with the composition program coordinator, but a much wider audience for the results of student performance on these assignments would be appropriate, including the WIC program coordinator and teaching faculty, library administration, and student programs on campus invested in successfully retaining students.

More systematic assessment and reporting of findings would be appropriate with our other major strategic instruction partner, the WIC program. Currently, individual librarians have undertaken analysis of
student research paper bibliographies to gauge student understanding and utilization of appropriate information resources. Because these are upper division courses, it would potentially be useful to compare these with the bibliographies prepared by students in the lower division Writing 121 course.

CONCLUSION

Developing meaningful assessment of a library’s instruction program is not unlike the process of research that we strive to teach our students. It is messy, iterative and seldom, if ever, straightforward. The concepts and skills we are trying to measure are multiple and complex. This means, realistically, that no single measure, delivered a single time, to a single designated cohort of students will suffice. Information literacy assessment can take place at numerous levels in an institution and, at successively higher levels, more collaborative efforts are required. This also increases the challenges for assessment.

It is essential that library instruction programs embrace the learning outcomes paradigm which governs higher education and that we lead the way in integrating information literacy competencies. If academic libraries are going to remain relevant to the educational missions of our institutions, we must demonstrate how we contribute to student learning and preparation for the world they face beyond graduation. Incorporating assessment into every aspect of our instruction, at every level, alone or in collaboration with others, is a necessary strategy for survival. Beyond that, well-designed assessment can be formative as well as summative, allowing us to continually improve the effectiveness of what we do.

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From Transmission to Research: Librarians at the Heart of the Campus

James Wilkinson

SUMMARY. Current changes in higher education practice and thinking recognize that undergraduate education has suffered because colleges and universities have not been teaching as well as they might. These changes carry both promise and challenges for librarians. Rising to these challenges is imperative because without the collaboration of librarians, attempts to improve teaching and learning are less likely to succeed. [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-342-6678. E-mail address: getinfo@haworthpressinc.com <Website: http://www.haworthpressinc.com>]

KEYWORDS. Undergraduate education, teaching, learning, collaboration, pedagogy, Research Model, Transmission Model

College libraries have often been described as the heart of the campus, and for good reason. Their collections nourish scholarship and teaching—which define colleges and universities—while their staffs promote the circulation of materials, without which neither could take place. “Nourishment” and “circulation” evoke the enabling role that libraries have traditionally performed. But they also suggest a broader interdependence: As the heart affects the college, so do other areas of the college body affect the heart.

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Current changes in the practice of teaching in higher education stem from a recognition that colleges and universities have not been teaching as well as they might and that the quality of undergraduate instruction has suffered. Parents, alumni, and students are asking colleges to become more “learner-centered” and to emphasize inquiry and research at an undergraduate level. Government agencies such as the National Science Foundation, as well as private groups such as the American Association for Higher Education and the Carnegie Endowment for Higher Education, have publicly championed the cause of reform (Hutchings, v).

Changes in pedagogy carry both promise and challenges for librarians. As students are being weaned from traditional lecture courses, the materials available for research are expanding as never before. Information technology enables faculty and students to gain access to a cornucopia of digitized data with unprecedented breadth and depth. And this creates a dilemma. As growing numbers of neophyte researchers confront a growing expanse of information, students’ ability to make use of library resources suffers. More people with less training are being asked to do more difficult things—with predictable results.

One solution to this dilemma, I propose, consists in librarians aligning more closely with the teaching community as staff whose skills can serve the educational enterprise in new and broader ways. Current attention to student learning represents a genuine opportunity to redefine relations between librarians and faculty, the reading room and the classroom. Without the collaboration of librarians, attempts to improve teaching and learning are less likely to succeed. What might otherwise seem like special pleading on the librarians’ own behalf actually strengthens the drive toward making inquiry and investigation key activities of undergraduate education.

As a prelude to concrete suggestions for collaboration between librarians and faculty, it may be useful to outline the principal changes in the teaching and learning paradigm that expand the teaching role of the library. Some are undoubtedly acquainted with these changes and their rationale and may wish to skip the next three sections on changes in teaching practice and move directly to the subtitle “Librarians and Learning.” Since the partnership I envision requires understanding both the new pedagogy and the concerns that motivate its defenders, other readers may find a refresher course useful.
FROM TEACHING TO LEARNING:
HISTORICAL BACKGROUND

The reform movement in teaching is not new. John Dewey, among other pioneers, outlined its essential elements nearly a century ago. “It is not the business of the school to transport youth from an environment of activity into one of cramped study of other men’s learning,” he wrote in 1916, “but to transport them from an environment of relatively chance activities (accidental in the relation they bear to insight and thought) into one of activities selected with reference to guidance of learning” (Democracy and Education, 274). Yet despite Dewey’s warning, deference to “other men’s learning” has characterized American higher education for most of the intervening years. Knowledge flows from the top down, in this view, passing from teacher to student, from expert to novice. The teacher is accorded the respect due the collective labors of that long line of thinkers and researchers, artists and academicians of whom she is the living representative. The student, for his part, is an apprentice whose largely empty mind awaits the store of knowledge that the teacher will transmit. A perfect match.

One appeal of that traditional view of college teaching was precisely that it assigned clear and unambiguous roles to teachers and students. Inside the classroom, professors lectured; students listened and took notes. Outside the classroom, professors engaged in research and writing; students studied, read, and did their homework (or borrowed it if time ran short). Contact between teachers and students, as befitted relations between unequal partners, remained largely restricted to office hours and occasional questions before or after class. This freed faculty to deliver their insights into Beowulf or the Kondratieff cycle with minimum student interference and maximum efficiency. Students, in turn, were expected to reproduce these insights as faithfully as possible. If the student could write an essay at the end of the semester that was virtually indistinguishable from Professor Krump’s lecture on the same topic, that feat of mimicry provided strong evidence that learning had occurred.

This state of affairs has come to be known as the Transmission Model of teaching—also sometimes termed the Banking Model, since faculty “deposit” knowledge which students “withdraw.” According to the Transmission Model, knowledge resembles an object or sub-
stance, like money, or a book passed from hand to hand, or a liquid poured from one container into another. Think of the lecture hall as a soup kitchen. The professor stands behind a steaming cauldron of knowledge, wielding a large ladle, while the students line up dutifully for their daily rations, bowl in hand. Young minds seeking sustenance drink their fill of academic soup, a hearty broth distilled from scholarship stretching over many years.

The soup analogy, however, fails in one important aspect: While a soup cauldron can be emptied, a professor’s lecture notes can be used year after year without change. The professor, that is, does not cease to know his subject once the lecture is over. Nor is the transfer complete. Even the most gifted students will not extract all the intellectual nourishment of lectures devoted to Beowulf or the Kondratieff cycle. That awaits graduate study and further training in the field. But to the extent that professors pass along the contents of their lectures (as reconstituted by their students), knowledge does indeed become an object—notebooks filled with writing, to be consulted after class and on the eve of the final exam. I still possess several fat volumes of lecture notes, some thirty years old, as testimony to my skills as an undergraduate scribe. And I suspect I am not alone.

**EDUCATING THE PARROT**

The Transmission Model remains the dominant teaching mode on a number of campuses, where professors continue to lecture and students continue to take notes as of yore. But this model has also sustained serious critiques from various quarters since Dewey’s time, particularly during the past two decades. Most damaging has been the assertion that transmission encourages superficial reproduction rather than genuine learning. There is a cartoon that exemplifies this critique, featuring a parrot whose proud owner is showing a visitor a truly awesome array of framed diplomas on the wall. “Well,” says the owner, “he’s only a parrot, but as long as he can repeat precisely what he hears, he can continue to get college degrees from any school in the country.”

Faculty who correct their own exams recognize that students, unlike this parrot, do not repeat what they hear without error. Their essays resemble instead a game of “telephone,” where the sentence whispered in John’s ear by Professor Kantor at the start of the chain (“I’m going to Paris this summer”) becomes distorted by the end (“I’m
growing pears for the plumber”). One reason for this distortion is that not a great deal of thinking occurs while students take their notes. They sit and transcribe. Another reason, paradoxically, is their desire for things to make sense. If what the professor says confuses them, they will invent a plausible alternative. Thus another argument against the Transmission Model is that it promotes errors in replication, since it offers no means of testing these errors against evidence revealed by individual inquiry.

What has most strengthened the hand of the critics, however, is evidence that even students who appear to grasp the material (an impression based on high scores on standard tests) may fail to understand that material on more profound levels. Like the parrot in the cartoon, they look like they know what they’re talking about until you start asking them to take what they memorized and apply it to some new situation. Then they fall mute. In one example well known to the physics community, Professor David Hestenes at Arizona State University decided to test the conceptual understanding of students who had taken an elementary mechanics course there. His questions required no computation, but asked students to predict the trajectory of various objects subject to various forces. Those who understood concepts such as force and momentum, he thought, would have no difficulty.

Thirty-six such questions were given to students drawn from four different lecture courses in elementary physics. All but a tiny fraction did poorly on the exam. Asked to make predictions on the basis of conceptual knowledge, rather than to plug a series of numbers into a formula, the students were stumped. They had no idea whether a falling object released at an angle continues to fall at that angle or falls straight down. If a hockey puck traveling in one direction was hit in another, would it go off at an angle, or in a curve? These questions were novel, even if the concepts should have been familiar. As a result, only a few students in the class met the challenge successfully.

The problem with traditional teaching (as this example illustrates) is that it teaches so poorly. When physics students took the same test at the beginning and end of the introductory course, their results showed an average gain in basic knowledge of 14 percent. That is not much. As Hestenes and his co-author noted in a summary article: “Our diagnostic test results show that a student’s initial knowledge has a large effect on his performance in physics, but conventional instruction produces comparatively small improvements in his basic knowl-
edge” (Halloun and Hestenes, 1048). In other words, whereas conventional teaching had little effect on these students, their initial preconceptions have a far greater effect on how they understand the material than did classroom instruction. And what little students do learn, they often learn on their own. The idea that students know things that they have largely taught themselves supports the alternative teaching model below.

So what will have an effect? To ensure that students actually understand and can apply concepts, something else is needed besides speed writing and memorization. Hestenes and others have argued that we can do better than the Transmission Model. But what would an alternative model look like?

**AN ALTERNATIVE MODEL**

An alternative teaching model would be designed to follow more closely how learning actually occurs. It would chart the chain of events that leads from (relative) ignorance to (relative) mastery and propose a classroom strategy that includes them all. For example, we could postulate that five steps must occur before students actually understand material well enough to pass Hestenes’s concept test: (1) curiosity (the “need to know”); (2) questioning; (3) hypotheses based on the questions; (4) information gathered in response to the hypotheses; and (5) a conclusion (hypothesis confirmed or refuted by the information). Listed in sequence, they are:

1. curiosity (the “need to know”)
2. questioning
3. hypotheses based on the questions
4. information gathered to test the hypotheses
5. a conclusion (hypothesis confirmed or refuted by the information)

Notice that in this model the transfer of information, that substance being laddled out to students in a traditional lecture, comes relatively late in the sequence as step four. Information is not the first, or even the most important part of learning. It is a tool needed to solve a problem, rather than an end unto itself.

I have taken the liberty of inserting a line between steps three and four. One way to understand the challenge to the Transmission Model
is that it focuses attention on the steps above the line, those which precede information. It points to what needs to happen before students line up at the cauldron of knowledge, bowls in hand. All too often, lectures provide answers to questions that students have not yet formulated— which have never even occurred to them to ask. The Treaty of Versailles in 1919 imposed a heavy reparations burden on defeated Germany. So? Do we really care? But if we ask how it might be possible to prevent Germany from threatening its neighbors in the aftermath of World War One, then heavy reparations are an answer. In the effort to make learning more efficient, faculty skip the crucial issues of awakening curiosity, helping students ask questions, and thinking about plausible answers (hypotheses) first. This is precisely what happens in research. If we were doing research on the reparations issue, we would start with questions, such as the purpose of reparations, or the reasons for their lack of success. That should happen in teaching as well.

Thus a possible and practical antidote to the failure of learning that occurs in the Transmission Model would be: research. Research, that is, undertaken by students with faculty supervision, or, as Dewey put it, “activities selected with reference to guidance of learning.” Surely one of the principal fruits of academic study must be an understanding of how to acquire understanding—not just by looking something up in an encyclopedia (though that may be a place to start), but by asking questions, formulating hypotheses, and testing them with data. After all, the factual content of many of the courses taught in the academy will change in the next few decades. In every area of life and work, students will need to solve new problems every day. If faculty persist in handing out only the neat and tidy results of research to students, without ever initiating them into the investigative process that generated those results, how can they learn to investigate on their own?

Enter, then, the Research Model. It offers to make good on many of the failures of Transmission. “Active learning,” “student-centered classroom,” “problem-based teaching,” “case-based learning” are among other common terms applied to the new paradigm. Like members of a large family, these techniques differ somewhat, yet are recognizably akin. All share common assumptions about the importance of students to be doing more than just taking notes. Teaching and learning are seen as more collaborative than unidirectional, more horizontal than vertical, stressing communication between teacher and student,
with an open-endedness that comes from a focus on inquiry. They recognize that students must ask questions before consuming information. As a result, these alternatives propose a higher standard for learning than what we might call the “parrot test.” They expect students not merely to reproduce what they have heard, but to apply it with insight and understanding.

The Research Model is now challenging the Transmission Model on a number of campuses (as well as in pre-college education). With the new model, the definition of “teacher” has broadened to include not just faculty, but students, and, yes, librarians. This is not the same as an egalitarian classroom (or, as some critics suggest, the blind leading the blind). Instead, the metaphor often used is that of a coach or guide—someone who has been over the terrain before, and will help one traverse it without major mishap. But students still have to do the walking. Neither the most accurate and eloquent traveler’s report, nor the most technically sophisticated visuals can replace the experience of actually getting up (and down) a mountain on one’s own.

Students, interestingly, may at first feel confused and even cheated by the Research Model. They (or their parents) are paying a great deal of money to be taught. Why do they have to find out things on their own? Especially things the faculty already knows? Why can’t Professor Jackson just tell them the answer and cut out the hard work of inventing the wheel? To this plaintive query there exist at least two answers. The first is that students are more likely to understand and remember something that they have figured out by themselves. In the language of developmental psychology, processing information through inquiry increases the chances that this information will move from short-term to long-term memory, and thus be available for recall later (e.g., after the course has ended). The second answer is that we are trying to teach students not simply a body of knowledge, but a method: not simply content, but process as well. We are trying to initiate the students into those crucial first steps of curiosity, questioning, and formulating hypotheses that underlie problem-solving in the real world.

This is especially true of general education or core courses, which have increasingly become an important part of the undergraduate curriculum on many campuses. General education courses can be justified by the intrinsic worth of Shakespeare or Plato, of course. But they are even more justifiable on the grounds that they introduce students to a variety of modes of inquiry and problem-solving approaches. That
was certainly the hope of those who crafted the Harvard Core program two decades ago. The description of the program’s aim, which echoes that of many other forays into general education, reads in part:

The Core differs from other programs of general education. It does not define intellectual breadth as the mastery of a set of Great Books, or the digestion of a specific quantum of information, or the surveying of current knowledge in certain fields. Rather, the Core seeks to introduce students to the major approaches to knowledge [italics in original] in areas that the faculty considers indispensable to undergraduate education. It aims to show what kinds of knowledge and what forms of inquiry exist in these areas, how different means of analysis are acquired, how they are used, and what their value is. (Courses of Instruction, 1)

How does one study a “form of inquiry”? By asking the sort of questions and applying the sorts of tools appropriate to a broad field of research—moral philosophy, or art, history, or science. General education, in other words, makes the Research Model even more germane.

**LIBRARIANS AND LEARNING**

This long prologue has outlined the changing pedagogical landscape into which we are all entering. In one sense, librarians enter especially well equipped. After all, librarians know something about research. As its importance grows in the undergraduate curriculum, so does theirs. And if more teaching and learning now take place outside the classroom, with an emphasis on research or research-like activities, then this opens yet another path for librarians to join the teaching/learning enterprise. Further, given the flexible format of much of the new teaching, collaborative efforts are now encouraged to a greater degree than ever before.

An example is a recent query that went out among a group of faculty from several institutions about expanding their class materials. These faculty explored, via the Internet, the possibility of giving students specific and timely information concerning international affairs, and then using this information as the basis for class discussion. They traded their favorite IR issues and attendant documents back and forth, and helped one another assemble a stock (one might say a “virtual
library”) of teaching materials for common use. Here is an example of the intersection between the availability of data and new possibilities for student learning, as well as of the strengths of collaboration. Once faculty seldom revealed their teaching practices to one another; now, as we will shortly see, they need the help and support afforded by collegiality in the classroom.

For as the definition of teacher has broadened, so has the definition of sources on which student learning is based. Traditional sources-books, journals, archives, audio tapes, photographs, slides, posters, and the like—remain important. But they have become supplemented (though not supplanted) by a wealth of new additions, ranging from source books compiled thanks to Kinko’s photocopiers to CD-ROMs, courseware, and, of course, the Internet. Thus the shift toward the Research Model coincides with a burgeoning field of new products on which that research can be practiced. Libraries continue to function as repositories, like the great library of Alexandria. But they contain greater riches, and communicate more readily with other libraries, both real and virtual, than ever before.

The use of objects in the library—be they traditional or electronic—should be to stimulate learning. And here we encounter a paradox. For just as the holdings of libraries have increased, so the ease with which they can be brought to bear on research has simultaneously diminished. The faculty discussing new materials for teaching international affairs on-line huddled together, electronically speaking, in order to help find useful data. None presumably had the time to slog through the total mass of information available on even a single current hot spot such as Bosnia. A researcher (faculty or student) who looks up a keyword such as “Bosnia,” or “inflation” or “Milton” cannot possibly even check the relevancy of the titles, let alone read the literature revealed by the search (Wilkinson, 185-86). Welcome to the world of information overload.

Discussions of information technology (IT) and the new directions taken by teaching often suffer from two misconceptions. One is that IT and the new pedagogy are somehow in harmony, simply because they are occurring at the same time. In fact, with a few notable exceptions, early attempts to integrate IT into classroom practice have shown their lack of harmony far more often than their synergy. Put bluntly, most software is too stupid to allow for the unexpected, and the unexpected is precisely what the Research Model attempts to foster. Thus we have
the paradoxical situation of the latest technology serving outdated teaching aims, and the latest teaching being unable to use much of it.

Technology threatens either to make students too passive, or to inundate them with too much information. Their passivity results from programs that provide video "enrichment" with no need to think or solve problems. A CD-ROM entitled "From Alice to Ocean," for example, allows one to follow a trek from the Australian outback to the shores of the Indian Ocean, but prevents students from asking their own questions or doing much more than clicking the mouse at appropriate intervals. Not much research there. But the information glut constitutes a still more serious issue. Nowhere, to my knowledge, have those who design databanks seriously debated the disadvantages of having too much information. Like money, more is presumed to be better. And we are all, it seems, eager to accumulate as much as possible. The U.S. Census Bureau offers us the latest census data on-line; NASA's web site allows us to download the latest views of space as recorded by the Hubbell Telescope. Journal articles, vote totals from the Indian parliamentary elections, and continuous global weather data crowd the Internet. Information stretches as far as the eye can see.

How do we survive the rising tide of information? Though it may seem counterintuitive, one important role that librarians can serve in the new teaching paradigm is to protect both faculty and students from data overload. Librarians can help direct students and faculty to the most promising sources; they can also help them hone their digital skills on the Internet. The burgeoning variety of resources makes guidance all the more important, especially since, as noted at the start of this article, most students, at least, have very little training (if any) in the research game.

Genuine research starts with a question or questions, as we have seen. Equally important, however, is the ability to distinguish between more and less promising questions. Some may be too broad, some too narrow; some trivial, others requiring a lifetime of study. Like Goldilocks, students may have to sit in various chairs and try eating soup from various spoons before they find one that is "just right." In the Transmission Model, students fill in the outlines, like preschoolers with a coloring book. In the Research Model, they take more initiative. The hierarchical concept of knowledge passing from the top down is replaced with a more democratic concept of collaborative inquiry. A
salient aspect of this initiative lies in devising fruitful lines of exploration, and knowing how to pursue them as a team.

Of course, one characteristic of research is precisely that its early stages make it difficult to distinguish between more and less fruitful questions and more or less useful information. While one is refining one’s question, and making preliminary forays into the archival underbrush, it is easy to go astray. But going astray may also prove productive. Not all “mistakes” turn out to be a waste of time. A student who tries to dig up information concerning Thomas Jefferson’s Louisiana Purchase may find that the topic is too broad, but that the Aaron Burr conspiracy involving General James Wilkinson, which he stumbled across in the course of looking into the former topic, is just the thing. Research (like life) is messy and unpredictable. Librarians can at least help distinguish between wasted effort and productive mess. For example, they can reassure students that much apparent waste is in fact normal and productive, and remind them that skills in the research process may matter more in the long run than the narrow research outcome of this particular effort.

George Allan argues this issue in “The Art of Learning with Difficulty” that “to know how to go about learning things is far more important for students than what they’ve learned.” I wholeheartedly agree. Of course, inquiry cannot be taught in a vacuum. That is to say, course content provides a necessary vehicle for learning “how to go about learning things.” A course that simply investigated the theory of learning would do little for most undergraduates, since what they need is practice doing inquiry in a particular discipline. Furthermore, that practice (Allan’s “how”) will vary from field to field. The mode of inquiry in history overlaps with—but is not identical to—the mode of inquiry in medicine, or English literature, or urban sociology. The research model assumes that content is not an end in itself, but a means to a greater end, which is learning how to learn.

**THE LIBRARY CHALLENGE**

Triage, even within the more challenging parameters of the information revolution, still belongs within the traditional purview of the reference librarian. The greater challenge for librarians is to go beyond even the complex role of guide to the information superhighway, and
to enter the new world of Research Model pedagogy as partners with faculty.

Librarians, of course, have always taught. Whenever they explained the holdings of the library, or the methods best suited to retrieving New York Times articles on microfiche, or how to get the reel-to-reel audio tape to work, they assumed a teaching role. But this role has most often been related to step four in our model, the step that relates to conveying information. Librarians have known where information resides in the heart of the campus. The Research Model, on the other hand, gives questions a new prominence as the engines that drive inquiry. Thus librarians may wish to become involved earlier in the learning process, back at the first step, where students’ curiosity is whetted, or at the second step, where questions are being formulated. In addition to giving guidance about information itself, they can also help students and faculty consider which questions are most appropriate, given the resources available for research in different domains.

Starting at the point where learning involves asking questions suggests two specific challenges for librarians. First, they can help faculty understand the teaching potential of the library within the new paradigm. They can explore what projects it makes possible and how they could be integrated into existing courses, what archival collections are available, and how they could be used most imaginatively for undergraduate projects. I imagine a series of coffee conferences, with faculty invited from related disciplines such as American history and American literature, where such questions would be posed. “We have a complete collection of yearbooks from Warren Easton Boys’ High School in New Orleans starting from 1927—how might they be used for an investigative project in modern American social or education history?” Faculty could be drawn to explain their educational goals for a specific course, and librarians could then think with them about how specific library resources might support student work in pursuit of those goals.

The second challenge involves helping students to frame questions, rather than just find information. Perhaps librarians might do this in tandem with faculty, perhaps on their own. I imagine a taxonomy of questions posted somewhere near the card catalogue (or on-line), divided broadly by field, with grand but unwieldy questions (“Why did the Civil War begin?”) contrasted with narrower but more useful ones (“Why did the state of Georgia vote to secede from the Union?”), and
some hints on how to gauge which is which. Students need coaching in the art of asking good questions—questions, that is, that lead to learning. They need to see how a question might play out in terms of time and research effort. And here librarians, knowing the available resources as they do, can offer especially valuable assistance.

But they should not offer too much. George Allan calls this paradoxical skill “not being of help.” Not helping constitutes the exact antithesis of the Transmission Model. For instead of handing information to the student, a space of tension is created within which the student is encouraged to investigate something on her own. That something needs to answer a question that students care about (see steps one and two above), via a process of discovery that teaches the student that she can discover things on her own. Teachers are proud of what they know; librarians, in my experience, are proud of knowing the tools required for inquiry. That constitutes a certain advantage over faculty. Faculty may be tempted to give answers to students in their field of expertise. Librarians, on the other hand, will be less tempted, since their area of expertise is the research process itself. They are hence less likely to rob the student of the sense of accomplishment that comes from successful (and minimally aided) discovery.

A good example of how learning can be facilitated without spoon-feeding the student is a technique elaborated by Prassede Calabi (with funding from the National Science Foundation) to sharpen learners’ questioning skills. Teachers and students of ecology were asked to observe a nearby habitat (a park or a vacant lot near the school), sit alone for a half hour, and write down twenty-one questions. There was nothing magic about the number twenty-one, but the more questions the better. Anything that struck learners as interesting or odd deserved inclusion in the list. “Where did these plants come from?” “Why are there crickets, but no butterflies?” “Does noise from nearby traffic affect animal life?” And so forth. From each person’s list of questions, participants then selected their top or “burning” question, which they shared with the (reconstituted) group. The group discussed each question in turn, making suggestions about how it might be expanded or focused. In the end, the group decided which questions to pursue, and which experiments might lead to answers (Calabi, 493).

The sense of how best to help the beginning researcher—or even the more advanced faculty investigator—comes with practice. Where possible, I would suggest that librarians begin that practice on themselves.
A version of Calabi’s “21 Questions to Conclusions” can be applied, for example, to the pedagogical challenges facing library staff. At the teaching center that I direct, librarians come together on occasion to pose questions relating to their craft, such as “How do you help students at the start of their first year?” or “How do you handle disruptive questions?” or “How does one calibrate information to audience members at different levels?” We have then circulated the questions within the group, and then met again to discuss those that seemed especially “burning.” This exercise has the advantage of modeling what may be an unfamiliar teaching technique on safe ground, and with the promise of outcomes of direct benefit to the participating librarians.

Perhaps the moment has come to put in a good word for teaching centers. As the director of one, I am naturally biased in their favor. Yet I also know how teaching centers can help to link libraries and librarians with the classroom. At Harvard we regularly and successfully invite librarians to participate in our training programs for young faculty and graduate teaching assistants. If anyone on your campus knows about both the promises and the pitfalls of the Research Model (or active learning, or whatever its local label), then it is likely to include folks at the teaching center—should you be lucky enough to have one. They can suggest readings, lend videotapes of exemplary teaching, even observe sessions where librarians attempt to expand their teaching skills and offer feedback. A library-teaching center alliance promises important benefits for both groups.

The Research Model makes possible and delivers, improved student attitudes and better student learning. But implementing it is not easy. It demands different skills and more overall effort from the teacher. The fact that students assume a more active role in the classroom makes the teacher’s role more complex—a point often forgotten in discussions of the new pedagogy. A key component of that complexity is getting students motivated. Whereas teachers once exercised “control” directly (through lecture and the syllabus), now teachers act more indirectly, through questions, group facilitation, and as guides. Only indirectly can they inspire student motivation, without which neither research nor class discussion will succeed. This means knowing students in new and perhaps unfamiliar ways. Thus even faculty who wish to adopt the Research Model may experience a steep learning
curve, lasting several semesters. They need whatever help they can get—including the help of librarians.

Because the Research Model requires that we understand the links between curiosity, questioning, research, and information in a deep and integral manner, it worries me that some advocates of active learning adopt its procedures piecemeal. They do not seem to grasp that the model works only as an integrated whole. So, for example, it does little good to prompt students to ask questions if there is no thought given to follow-up projects, or to invite discussion and then pre-empt it with a mini-lecture. As the questions from the Harvard librarians illustrate, group dynamics alone can play a major role in the success or failure of a more open-ended, participatory style of teaching.

In order to spread and invigorate use of the Research Model, we need to be concerned about raising the level of teaching skills among faculty and among librarians. If it is to be fully successful, the Research Model must be more than a set of slogans or gimmicks. It has to transform fluid moments into learning opportunities. The strength of the Research Model, after all, is its potential to help each student think and understand. That is also the strength of the library and its staff. There, at the heart of academe, the synergism between these two strengths should grow and nourish the academic enterprise in ways we can only begin to imagine.

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