

Creating and Sustaining a Culture of Evidence and Improvement: How Can Integrating Institutional Research, Assessment and Planning Help?

Christina Leimer

Director, Institutional Research, Assessment and Planning
California State University, Fresno

April 2009

WASC, like most regional accrediting agencies today, requires higher education institutions to develop and demonstrate a culture of evidence-based decision-making and improvement as part of its emphasis on effectiveness. It is common for site teams to find, instead of long-term sustained use of data, a build-up that seems to coincide with the writing of the self-study. Often, this momentum is not sustained after the site team leaves. If use of evidence and an improvement orientation were part of the culture, this pattern would not exist. Rather than such episodic build-ups, how can a true “culture” be created and sustained?

Whether culture can be changed intentionally is debated in the literature. Some say, if changes occur, they occur only under duress from an external source (Ouchi and Wilkins, 1985). For colleges and universities, WASC, the Spellings Commission on the Future of Higher Education, state budget deficits and political pressure have supplied the duress. But even in the midst of such conditions, cultural change will not just happen. Leadership, vision and direction are critical. Structures and processes that will support change and the emerging culture are necessary as are communication, collaboration, data and research, patience, time and sustained effort (Alfred and Rosevear, 2000; Bresciani, 2006; Duke, 2002; Goben 2007; Hollowell, Middaugh and Sibolski, 2006; Lisensky, 1988; Ouchi and Wilkins, 1985; Robertson and Seneviratne, 1995; Watkins and Marsick, 1993).

This paper addresses these critical components of systemic and cultural change by focusing on California State University-Fresno’s approach to building a culture of evidence and improvement, particularly its integration of institutional research, assessment, planning, and academic program review. Scant literature or examples exist to guide colleges and universities in developing such a culture. For this reason, this paper focuses on our experience at Fresno State to elucidate major issues and challenges to be considered by any college or university attempting to create and sustain a culture of evidence and improvement or, as it is sometimes referred to, an effectiveness culture.

Overview of Integrated Functions and Processes

It was during the self-study process for its 2004 WASC reaccreditation that Fresno State decided it needed integrated planning and assessment and more high quality data and research. Developing a campus-wide culture of outcomes assessment and commitment to continuous improvement was built into its strategic plan. To fulfill these goals, institutional research, outcomes assessment and academic program review, and strategic and academic planning were aligned. Expanding and developing an office of Institutional Research, Assessment and Planning (IRAP) is a component of this integration and the primary focus of this paper. Other alignment processes include annual

reporting, incorporating outcomes assessment into program review, adjusting the curriculum change process, annual funding for designated strategic goals, and collaboration between IRAP and related departments. Following is a brief overview of other alignment processes to offer a more complete picture of Fresno State's integration model.

At Fresno State, annual reporting assures that all colleges, units and departments are aware of the university's strategic planning goals and are working toward achieving those goals. Each spring, all departments and units report on progress made toward relevant strategic planning goals. Each Vice President provides a written and oral presentation of progress to the Strategic Planning Committee. Every year, the President allocates Plan for Excellence dollars based on the committee's review of progress and the Vice President's requests for financial support for specific initiatives. In this way, departmental and institutional goals are aligned, progress is regularly monitored, and funding is made available to support strategic goals.

For academic departments, the annual reports serve other alignment and integration purposes as well. In addition to reporting on progress toward strategic goals, departments report on outcomes assessment activities they have conducted, their findings and changes made as a result. This reporting allows monitoring, provides documentation of continuous improvement, and helps establish the expectation that assessment is a regular part of what we do. A third aspect of annual reporting for academic departments is follow-up on recommendations in their Program Review. Programs that received such recommendations must report on progress toward implementing those recommendations. Again, this mechanism helps establish that improvement is an expected way of life at Fresno State.

Another modification that was made to signal the importance of learning outcomes assessment was to adjust the requirements of the curriculum change process. In addition to the reason for the proposed curricular change, information about assessment findings considered in requesting the change must be reported. Modifying this process not only contributes to making the expected use of assessment visible and routine, it provides another way to monitor and document the degree to which assessment is being carried out and utilized in decision-making.

The Role of an Integrated IRAP

With the demands on higher education today, institutional research offices whose primary role is reporting and filling ad-hoc data requests are no longer sufficient. IR can be much more valuable to colleges and universities by expanding its responsibilities. This narrow definition of IR existed at Fresno State until the President, Provost, and members of the self-study team recognized more was needed and set out to recruit a director who could develop a different model for Fresno State. In doing so, latitude and support were given to the Director to develop the department to meet the institutional goals.

As the IRAP Director, my vision for integrating such a department is as a champion, supporter and facilitator of institutional effectiveness. I define effectiveness in the broad sense, as the process of establishing goals, assessing performance, and using the results to make improvements. This perspective presents possibilities for IRAP to offer more than data. For example, in addition to conducting environmental scans and targeted research, IR can assist in establishing goals through consultation with managers

and/or facilitating goal-setting processes such as retreats, forums or other planning activities. By taking on responsibility for assessing performance, IRAP can offer methodological training to managers and faculty to help them assess their own areas, assess or evaluate critical institutional initiatives, or collaborate with and lend expertise to others who are assessing their programs. In assuming responsibility for encouraging the use of results, IRAP must be a communicator and educator, and can become a focal point for developing and sustaining a culture of evidence and improvement.

In addition to providing greater value to the institution in these tangible ways, the existence of a department whose responsibilities reflect the organization's commitment to effectiveness can help keep this goal and method of operating in collective awareness, bring or keep this orientation alive in an organization's culture, and coordinate and integrate a set of tools that help executives, senior managers and faculty make the organization effective and identify where it is successful and where it is lagging. Not all of these envisioned tasks are IRAP responsibilities at Fresno State, but it is this perspective and purpose that guides my decisions about developing IRAP and integrating planning and assessment as called for in Fresno State's strategic plan.

IRAP Restructuring and Development

Integrating institutional research with the other quality functions on campus, i.e., planning, assessment, program review, and accreditation, can be achieved in two ways, either through direct administrative oversight of the function by the IRAP manager or through collaboration with other managers and links to the relevant processes they oversee. At Fresno State, we use both of these methods. While I am the administrator responsible for the operations of institutional research and institutional and academic outcomes assessment, another director is the accreditation liaison. Program review responsibility is shared by two senior managers and three committees. Academic planning is administered by the Provost and strategic planning by the President. Consequently, IR and assessment are structurally integrated while planning, program review and accreditation are integrated, or aligned, through collaboration and linkages.

An example of integration and alignment through collaboration and linkages at Fresno State is Program Review. Two administrators, i.e., the Dean of Undergraduate Studies and the Associate Dean of Graduate Studies, and three committees oversee and manage the program review process. IRAP's role connects at three points. IRAP provides a standard set of data to programs undergoing review. The Director meets with the Department Chairs and Program Coordinators to provide them with the data and discuss what it can tell them about their program and how they might use it in writing their self-study. The IRAP Director is again involved in Program Review when the self-studies are initially submitted to the Program Review Officer. The Dean and Associate Dean review the self-studies to check for completeness of materials. The IRAP Director reviews the materials for this purpose as well but also to check the status of the program's assessment activity. With this early alert of the state of the program's assessment, IRAP can offer assistance or suggestions to the program if needed. Additionally, reviewing the self-studies builds the Director's knowledge of the status of assessment across academic departments so common issues can be addressed. In order to address assessment expectations earlier than completion of the self-study, this spring I began incorporating

assessment advice and expectations into my discussion of the standard data set when meeting with Department Chairs and Program Coordinators.

The IRAP Director is again part of the program review process at the end, when the program's action plan is reviewed and discussed. At that time, the program's Department Chair and Program Coordinator and the Dean of that college meet with the Action Planning Committee for review and approval or modification of the action plan, i.e., the program's strategic planning document. The Action Planning Committee consists of the Provost, Undergraduate and Graduate Deans, Associate Graduate Dean who serves as the Program Review Officer, and the IRAP Director. The Provost's appointment of the Director to the committee is another signal of the importance of outcomes assessment. Additionally, it offers another opportunity for a discussion of assessment. Often I am able to give suggestions based on a reading of the self-study that helps faculty see "natural" points in their program where assessment could be easily incorporated or where it is already occurring but has not been formalized.

In this example, integration and culture building is fostered through collaboration, linking of existing processes and structures (i.e., incorporating the IRAP Director into the self-study review and appointment to the committee), and development of new processes (i.e., meetings to discuss using the data and assessment in the self-study). In contrast, the institutional research and assessment functions, over which the IRAP manager has direct administrative responsibility, comprise the IRAP office. Processes had to be put into place to link them to each other as well as to planning.

At Fresno State, IRAP performs the commonly assigned IR tasks such as administering and analyzing institutional surveys and generating descriptive data that characterizes the university. However, with the purpose of integrating planning and assessment, developing a culture of evidence and improvement, and achieving strategic planning goals always in mind, choices must be made about research and assessment project priorities as well as ways to analyze, report and disseminate findings that will contribute to these goals.

One major choice that constantly requires attention is managing the amount of external reporting IRAP takes on. Compliance reporting concentrated in a small research office can squander expertise and eliminate the office's internal benefit to the institution. At Fresno State, this reporting is distributed across numerous departments; but with increasing external demands, I try to assure that IRAP takes on only those requirements that cannot be more appropriately reported by another department.

The ways data and research are packaged and communicated not only influences the extent to which they are used, but also the way IRAP is perceived. For instance, developing user-friendly reports in various formats, targeted to different audiences expands the breadth of possible uses and users as well as the campus community's knowledge of itself. When information is conveyed using standard research or technical protocols, it sparks confidence in IRAP's expertise, especially for audiences with a technical background. On the other hand, the same findings presented in bulleted or brief narrative form, or in nontraditional formats such as a story or quiz, reach an audience that simply wants to get to the bottom line or one that prefers language and imagery. Recognizing and responding to such diversity of perspectives suggests a flexible, approachable office, one that can be utilized by anyone. IRAP's clientele includes line staff, managers from all major divisions, executives and faculty from all disciplines. 87%

of IRAP customers report that the IRAP staff is very easy to work with. 85% rate the IRAP staff as very highly skilled and knowledgeable (rated 5 or 6 on a 6-point scale).

Focusing research, analyses and assessment findings on planning goals, initiatives or institutional issues is another way to assure alignment between IR and planning and prompt people to think about how the results are relevant or useful to them. Even in small ways, this can be done. For instance, if I send an e-mail announcing new data, I relate it to a specific university goal or suggest it be viewed for use in grant-proposals, recruiting, marketing, fundraising or whatever activity may be appropriate. Research findings are always reported in the context of the planning goal or university issue to which it speaks. Such an approach moves beyond data collection and dissemination, to sense-making, to thinking about what the findings mean, and engaging people in reflection on issues, the relationship to their work, or their contribution to the organization. In an evaluation of IRAP this fall, 72% of the users of IRAP services said these reports are useful; 76% said IRAP has extensively increased their knowledge of the university.

Web design and content is both symbolic and functional. It is IRAP's 24-hour representative, displaying a cohesive quality and information framework to all who access it. This forum makes commonly requested data readily accessible, facilitates broad dissemination of institution-level research and reports, serves as a repository for assessment resources, and hosts the university's strategic and academic plans and performance tracking system. In addition to multimedia, we are beginning to infuse interactive components into the IRAP site to encourage networking and collaboration across academic departments. Each year, average hits on the IRAP site increase. In 2005, 56% of IRAP customers used its website; in 2008, 85% did. Usage temporarily spikes 400-600% each time reports or new additions are announced.

When outcomes assessment began at Fresno State a decade ago, it was initiated and administered by the Associate Provost in conjunction with the Program Review Officer and Director of the Center for Enhancement of Teaching and Learning (CETL). With the Associate Provost's promotion to Provost and the CETL Director assuming broader responsibilities, program-level outcomes assessment became part of the newly integrated IRAP.

Program-level outcomes assessment is more difficult to integrate with the institution-level functions because it primarily occurs at the academic department level by a dispersed group of individuals, i.e., faculty across approximately 50 departments. One way to approach this is through use of technology, i.e., the IRAP web, a listserv established for Program Assessment Coordinators, and e-mail. All programs' outcome plans are posted on the IRAP web. This central, accessible storage offers a way to review program learning goals and objectives for commonalities that could serve as a foundation for university-wide learning outcomes. The IRAP web houses a growing archive of locally developed assessment instruments contributed by faculty. Although the primary purpose of sharing is to ease assessment work, another potential benefit is that it contributes to knowledge of other programs' goals and activity, thereby opening a door for the emergence of a more organic alignment of outcomes and higher quality assessment overall. The Assessment Coordinator listserv is a medium established for faculty to ask questions of each other and share information and experiences. In addition to announcements of assessment training, funding opportunities and events, I use the list

to disseminate IR data, research and progress on planning initiatives to faculty to aid in developing an institutional perspective and increase their awareness of university issues, especially those to which they may be able to tie their own disciplinary work.

Awarding mini-grants to stimulate and support outcomes assessment is a common strategy utilized at Fresno State and many other colleges and universities. This activity can serve integration and alignment purposes as well by building into the RFP and proposal rating additional points for tying the project to Program Review recommendations or university goals such as improving student retention or graduation, reducing remediation, improving students' writing, or university-level learning outcomes.

Another mechanism designed to facilitate integration, the Learning Assessment Team (LAT), is just beginning. LAT will develop an assessment network to share resources, best practices, expertise, and assessment experiences. Members were chosen, not only for their expertise, but because each holds a related committee or assigned-time position (General Education Committee, Undergraduate Curriculum Review Committee, Graduate Committee, First-Year Writing Program, Center for the Enhancement of Teaching and Learning) that operates independently and consequently lacks access to the cumulative knowledge of the status of assessment at Fresno State. The purpose of LAT is to stimulate natural linkages in order to reduce the labor involved in doing assessment, raise the overall quality of assessment, support Program Assessment Coordinators, spark innovative practices, develop a broad organizational view among members, and move into a perspective of evidence and improvement as natural to the academy.

Fresno State Results and General Observations

Nearly four years into this model, it is still evolving but results are positive. IRAP publications are used by a larger number of people than before. The campus community has learned more about students, academic programs and university goals through widely accessible, user-friendly reports that help make data and information easy to understand. Seventy-six percent of IRAP customers say IRAP has increased their knowledge of the institution, and decision-makers use that knowledge for numerous purposes. Several programs and initiatives have been evaluated. Strategic planning progress is tracked and readily available to the public online. Faculty members receive feedback on using assessment findings for multiple purposes that support program and university goals. A cohesive planning and review process uses resources more effectively by reducing duplication of effort. IRAP is becoming a visible champion for the institution's emphasis on use of evidence and improvement. However, much remains to be achieved. This is not surprising since, generally, cultures develop over decades or centuries (Ouchi and Wilkins, 1985). Building a culture of evidence at a college or university is likely to take 10 to 15 years of sustained effort (Alfred and Rosevear, 2000; Morest, 2007). However, from our current vantage point, some generalizations can be made about common processes, obstacles and challenges. Following are some of the most critical ones to consider.

Executive leadership and support for such a large change is crucial in setting expectations for others by the behavior they model and what they reward. They have the authority to allocate funds, change policy, modify organizational structures, design jobs and make committee and other appointments that can help foster alignment, integration and culture development. Appointments, in particular, can circumscribe or assist the

IRAP manager in fostering working relationships with key individuals, place the Director in the information flow so he or she accumulates enough detail and discussion-level knowledge to orient the resources of the office to key issues, and present opportunities to informally demonstrate the value and utility of the office to various constituencies and circumstances.

Currently, at Fresno State, the IRAP Director serves on the Strategic Planning Committee, Student Success Task Force, a Program Review committee, and the Learning Assessment Team. Involvement in these committees is useful for monitoring progress and gathering and providing specific information in these areas. The Program Review committee, in particular, allows the IRAP Director to gain in-depth knowledge of academic programs that may not be possible in any other way. However, each of these committees is specifically oriented to a particular “quality” function. Consequently, if participation is limited to such committees, IRAP is unable to accumulate in-depth knowledge of other aspects of the institution or management challenges. As a result, the contribution IRAP can make is limited.

A conceptualization of the research and assessment function that views it as producing institutional knowledge, rather than data, and as a source for strategy development (Sayers and Ryan, 2009) would open possibilities for additional appointments or participation that would assist IRAP in being proactive, anticipating emerging issues, drawing connections between various university issues which would maximize the utility of IRAP products, refining and redefining research that could help decision makers focus discussion and point to solutions, and to develop stronger working relationships and trust with other managers. To some extent the IRAP Director’s participation on Academic Council has this effect, and IRAP is beginning to be invited to participate in the development of new initiatives, an approach which eventually leads to ongoing and higher quality evaluation and the “expectation that a researcher will be involved with program development or policy change” (Morest, in press).

Given the influence of executives and the length of time it takes for cultural change to take root, nurturing it despite executive turnover is a common challenge. Each successive president and provost must maintain and advance the institution’s commitment (Morest, 2007). Leadership and assistance for developing and sustaining the cultural change should also come from senior managers. Expanding leadership and commitment would make sustainability less dependent on a single or a few individuals and help spread the cultural change more evenly across the organization. Additionally, drawing on the formal and informal leadership in specific colleges and departments may speed up the change, making it a real, living feature of an institution’s culture.

Having a designated office, a focal point, with a manager whose primary purpose is to look at the organization through an effectiveness lens is important. Common knowledge has it that a task that is everybody’s responsibility is nobody’s responsibility. Without a point person who keeps bringing it to attention and providing logistical support and encouragement, the activity either never gains traction or dissipates. Despite the external requirements and pressures for evidence and improvement, there is no administrative unit to which creating a culture of evidence and continuous improvement naturally falls, except possibly IR due to its research and evaluation expertise. Yet, in general, IR has neither voluntarily taken on the role, nor has that role been commonly assigned to IR. For IR to assume such responsibility, careful planning must occur to

assure that organizational support exists such as adequate staffing, an organizational location that facilitates implementation and conveys the authority to carry out that responsibility, access to institutional information and decision makers, committee and task force assignments that foster working relationships with a wide range of people across the institution, and venues for discussion and training. In some cases, providing the manager with training in leadership and organizational change would be beneficial.

The manager of such a department or unit must be able to work across organizational boundaries, earn the trust and respect of both administrators and faculty, and possess a high level of knowledge, expertise and leadership ability. Listening, observing, understanding the organization and strategically using that understanding helps facilitate change. When integration and alignment are attempted through collaboration and linkages rather than structural means, such characteristics are even more necessary. High visibility is important to assure that the office and its institutional purpose is known and demonstrated. Additionally, reporting to the president or provost signals to the campus community the importance of the responsibilities and creates a degree of positional authority that is generally lacking in a middle management position but is extraordinarily helpful in working across organizational lines. At Fresno State, the IRAP Director reports to the Provost whose expectation is that IRAP will serve the entire campus, not just academics. Approximately 60% of IRAP projects are for Academic Affairs. The rest are divided among the other divisions and external organizations.

Organizational structures can inhibit or support people's work. The traditional structures of most colleges and universities do not naturally support integrated learning experiences, establishment of overall desired learning outcomes, or assessment of the institution's effectiveness in achieving those goals due to the siloed nature of departments and units (Keeling, Underhile, and Wall, 2007). Organizations must create conditions that enable employees to learn from one another and work together across functional and disciplinary lines in a systemic way. They must consciously encourage and nurture collaboration and a collective or organizational viewpoint.

One mechanism at Fresno State that encourages and supports such efforts is the Student Success Task Force (SSTF), a group of approximately 30 academic and student services managers and faculty from various departments that is co-chaired by the Provost and Vice President for Student Affairs. This group began 5 years ago for the purpose of discussing and developing initiatives to improve student success, which is one of Fresno State's strategic planning goals. The SSTF reviews relevant literature, utilizes consultants, regularly tracks first-year retention and graduation rates, discusses progress on initiatives and reports that progress to the Strategic Planning Committee. Over time, its membership and activity has changed as needs arise. For instance, as new initiatives expanded beyond the traditional responsibilities of central advising and counseling, more faculty members were added to the committee to help foster collaborations and extend the initiatives into academic departments or the classroom.

Disseminating information widely, in appropriate, user-friendly formats, and encouraging its use is important, but data in itself does not produce an organization that learns and improves. When data and research influence decisions, especially major ones, the connection should be made visible to others. Presidents, Vice Presidents and Deans can do this in speeches or other media they use to address the general public, the university community or their unit. Directors can inform their staff when they make

decisions about their office or areas of responsibility based on data or assessment results. Doing so shares the basis for decisions with constituents and co-workers and helps encourage evidence-based thinking through example. Additionally, because organizational learning involves “continuously thinking, planning, reviewing” and adapting as an organization” (Duke, 2002, pg. 6), venues must exist through which leaders and managers can facilitate and support discussion, reflection and sense-making sessions centered on data and research (Leimer, in press) and feedback loops must allow for the research and discussion to have an impact on the institution (Morest, in press).

As culture develops, new mechanisms and processes may be needed to support it. Existing structures designed for one purpose may not suit a new way of working. For example, at Fresno State, and likely most other colleges and universities, few, if any, places exist for discussion and reflection on research and the issues to which it speaks. Regularly scheduled meetings developed to address specific areas of interest and agendas timed to facilitate information sharing may not be adequate venues. Nor may participant lists reflect the need for broader participation of diverse constituencies in effectiveness initiatives. Training on data use and assessment/evaluation is another activity for which new venues may need to be developed. At Fresno State, by collaborating with CETL whose meeting place and newsletter is established to facilitate faculty development, IRAP offers outcomes assessment training for faculty. While this is a means of reaching this employee group, it does not educate managers or staff in other units. One-to-one training is effective, and has been offered by the IRAP Director, but it is inefficient and too time-consuming to be the only strategy. A center for manager and staff training similar to CETL may be one approach. Other potential options may emerge through conversations with Human Resources. Determining the appropriate audience, methods and venues in which to offer training and discussions of selected topics and research findings is under consideration.

Conclusion

To whatever degree cultures can be intentionally changed, it can be done many ways, but choices must be intentional and the activity must be sustained. One of the benefits of integrating and aligning planning, institutional research, assessment and program review is that it concentrates resources and focus. Additionally, continuity is more likely when structures are put into place than when sustainability depends primarily on individuals and relationships.

Flexibility and an attitude of experimentation are essential. There is no recipe for changing culture; no ten-steps to a more effective organization. And when change is generated, there are often unanticipated needs and unexpected effects. Knowing and continually monitoring and assessing the organization helps to develop strategies and avoid pitfalls. But exploration is necessary for learning and growth. A climate that allows risk-taking without penalty for failure and that values innovation is more likely to get people to open themselves and their programs to assessment and evaluation. A culture of evidence and improvement is much more likely to flourish in a climate “of wonder, not of blame” (Goben, 2007).

Given today’s external climate, colleges and universities need to demonstrate effectiveness quickly. But, to change culture, time and patience are necessary, as are persistence and progress. Managing this dynamic tension between continuity and change

requires what I think of as “measured patience”; the ability to be patient enough to accept that “life happens” and “people are people” but impatient enough to keep pushing ahead, creating short-term wins in a very long-term process. “Measured patience” waits when necessary, while strategically moving ahead in other areas. Always, however, it stays the course. When a true culture of evidence-based decision-making and continuous improvement exists, it will be a way of life, not just something we do when the accreditors are coming.

Bibliography

Alfred, Richard and Rosevear, Scott. (2000). Organizational Structure, Management and Leadership for the Future. In Hoffman, Allan M., and Summers, Randal W. (Eds.) *Managing Colleges and Universities: Issues for Leadership*. 2000. Westport, Conn.: Bergin & Garvey, 2000.

Barker, Thomas S. and Smith, Jr., Howard W. (1998). Integrating Accreditation and Strategic Planning. *Community College Journal of Research & Practice*, 22(8).

Bess, James. L and Dee, Jay R. (2008). *Understanding college and university organization: Theories for effective policy and practice. Vol. 1 The state of the system*. Chapter on Conceptual Models of Organizational Design, Pg. 170-199. Sterling, VA : Stylus Publishing.

Bess, James. L and Dee, Jay R. (2008). *Understanding college and university organization: Theories for effective policy and practice. Vol. 2 Dynamics of the system*. Chapter on Organizational Learning, Pg. 660-707, chapter on Organizational Goals, Effectiveness and Efficiency, Pg. 750-789, chapter on Organizational Change in Higher Education, Pg. 790-825, chapter on Leadership, Pg. 826-885. Sterling, VA : Stylus Publishing.

Bresciani, Marilee J. (2006). *Outcomes-based academic and co-curricular program review: A compilation of institutional good practices*. Sterling, VA: Stylus Publishing.

Cohen, Don and Prusak, Laurence (2001). *In good company: How social capital makes organizations work*. Boston: Harvard Business School Press.

Duke, Chris. (2002). *Managing the learning university*. Philadelphia, PA: Open University Press.

Ernst, David J. and Segall, Peter. (1995). Information resources and institutional effectiveness: The need for a holistic approach to planning and budgeting. *Cause/Effect* 18(1), Spring 1995.

Goben, Allen (2007). Collaboratively leading institutional effectiveness efforts in higher education institutions. SAS white paper, SAS Corporation.

Hollowell, David. M., Middaugh, Michael F. and Sibolski, Elizabeth. (2006). *Integrating higher education planning and assessment: A practical guide*. Ann Arbor: Society for College and University Planning.

Julius, Daniel J., Baldrige, J. Victor, and Pfeffer, Jeffrey. (2000). A memorandum from machiavelli on the principled use of power in the academy. In Hoffman, Allan M., Summers, Randal W. (Eds.) *Managing colleges and universities: Issues for leadership*. Westport, Conn.: Bergin & Garvey.

Keeling, Richard P., Underhile, Ric, and Wall, Andrew F. (2007). Horizontal and vertical structures: The Dynamics of organization in higher education. *Liberal Education*, Fall 2007. Pg. 22-31.

Kezar, Adrianna (2005). Redesigning for collaboration within higher education institutions: An exploration into the development process. *Research in Higher Education*, 46 (7).

Leimer, Christina. (in press). Taking a broader view: Utilizing IR's natural qualities for transformation. In Leimer, Christina (Ed.), *Imagining the future: Institutional research at age 50, what will we become?* *New Directions for Institutional Research*. San Francisco: Jossey Bass.

Lisensky, Robert P. (1988). Integrating the control systems. In D. W. Steeples (Ed.), *Successful strategic planning: Case studies*. *New Directions for Higher Education*, 64:15-22. San Francisco: Jossey-Bass.

Malm, James R. (2008). Six community college presidents: Organizational pressures, change processes and approaches to leadership. *Community College Journal of Research and Practice*, 32:614-628.

Miller, Barbara A. (2007). *Assessing organizational performance in higher education*. San Francisco, CA: John Wiley & Sons.

Morest, Vanessa Smith. (in press). Accountability, accreditation and continuous improvement: Building a culture of evidence. In Leimer, Christina (Ed.), *Imagining the future: Institutional research at age 50, what will we become?* *New Directions for Institutional Research*. San Francisco: Jossey Bass.

Morest, Vanessa Smith and David Jenkins. (2007) *Institutional research and the culture of evidence at community colleges*. Community College Research Center, Columbia University.

Ouchi, William G. and Wilkins, Alan L. (1985). Organizational culture. *Annual review of sociology*, 11:457-483.

Presley, Jennifer B. (Ed.) (1990). Organizing effective institutional research offices. *New Directions for Institutional Research*, 66. San Francisco: Jossey Bass.

Robertson, Peter J. and Seneviratne, Sonal J. (1995). Outcomes of planned organizational change in the public sector: A meta-analytic comparison to the private sector. *Public Administration Review*. 55(6), Nov./Dec. 1995.

Sayers, Kevin W. and Ryan, John F. (2009). The institutional research option: Transforming data, information, and decision making for institutions at risk. In J. Martin, J. E. Samels, & Associates (Ed.), *Turnaround: Leading stressed colleges and universities to excellence* (pp. 211-220). Baltimore: Johns Hopkins University Press.

Spencer, Richard L. (1979). Planning and the future of institutional research. In Cope, Robert G. (Ed.), *Professional development for institutional research*, 23:69-72, *New Directions for Institutional Research*. San Francisco: Jossey-Bass Publishers.

Thackwray, Bob. (2007). How to lose friends and turn people against you. Organisational development tools: what they are and how we use them in higher education. *Perspectives* 11(2). April 2007

Tierney, William G. (1988). Organizational culture in higher education: Defining the essentials. *Journal of Higher Education*, 59(1). January/February 1988. Ohio State University Press.

Watkins, Karen E. and Marsick, Victoria J. (1993). Making the transition: How organizations learn and change. In *Sculpting the learning organization: Lessons in the art and science of systemic change*. San Francisco: Jossey-Bass Publishers.