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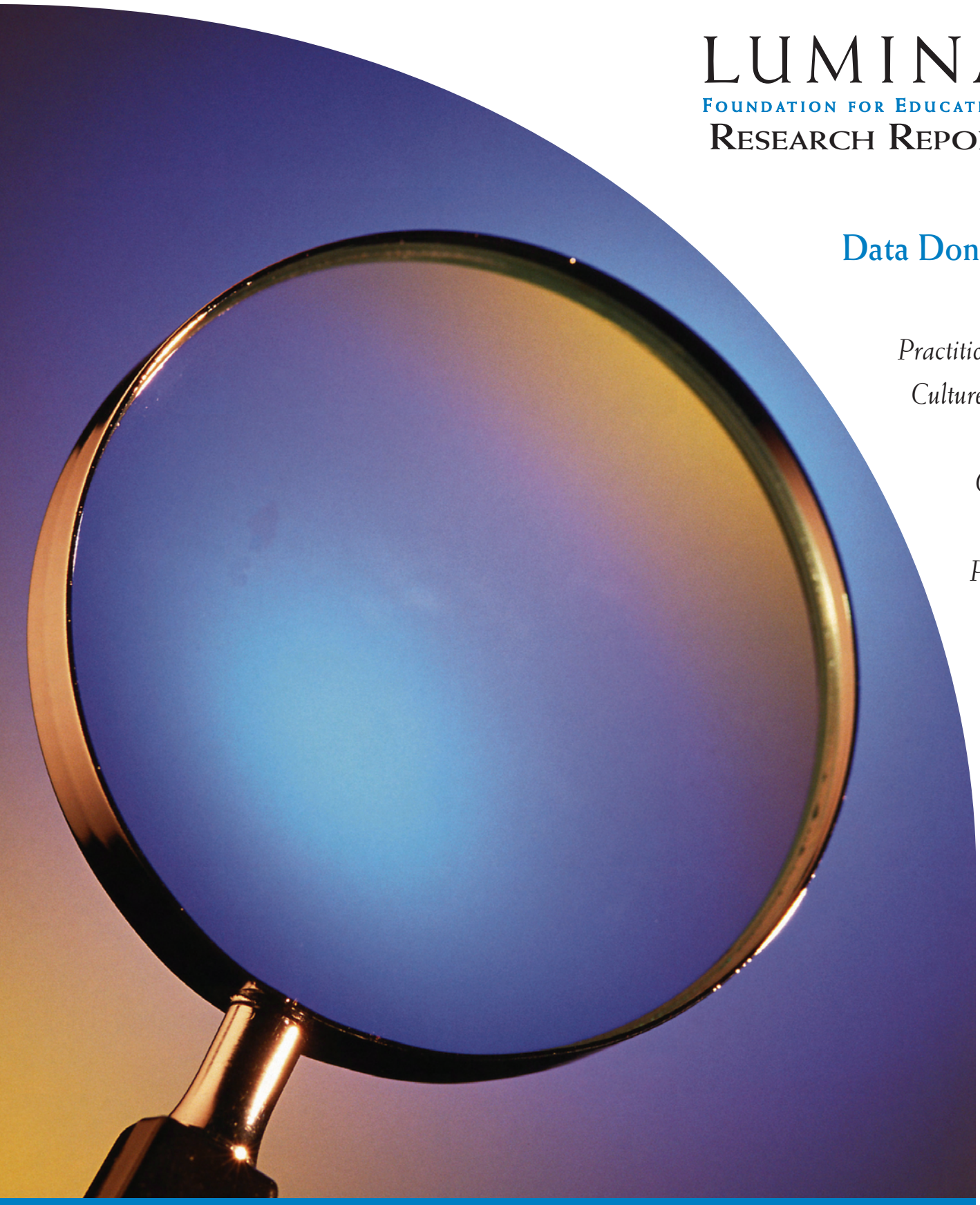

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RESEARCH REPORT

Data Don't Drive:

Building a Practitioner-Driven Culture of Inquiry to Assess Community College Performance

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Acknowledgments

This report draws on documents, presentations and discussions from the Community College Student Success Project (CCSSP), a research and service initiative at the Graduate College of Education, University of Massachusetts Boston. The CCSSP was sponsored by Lumina Foundation for Education as part of the Foundation's ongoing efforts to enhance the success of students in the nation's community colleges. The report also is informed by members of CCSSP's National Advisory Council, by a Think Tank convened by the New England Resource Center for Higher Education (NERCHE) and by research associates who are practitioners in community colleges. The author acknowledges helpful information and insights provided in response to earlier drafts of this paper by Estela Mara Bensimon, Rob Campbell, Judith Ouimet, William Heineman, Nathan Marti, Kay McClenney and Jeffrey Seybert. The views expressed are those of the author and do not necessarily represent those of Lumina Foundation, its officers or other contributors to the project.

DEDICATION: This report is dedicated to Dan Walleri, a member of CCSSP's National Advisory Council until his passing in the summer of 2005. His thoughtful contributions, sound advice and steady vision are greatly missed by all who had the pleasure to work with him.

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Executive summary

A variety of formal benchmarking practices are being used in higher education today, and these efforts seem to be growing in sophistication. This report reviews those benchmarking practices, particularly those being used at community colleges, and introduces the concept of a "culture of inquiry" as a means for judging their potential value.

Campus benchmarking activities share some basic traits: All seek to assess a college's achievements, shortcomings and environments (often in comparison with peer institutions) and to identify strategies for improvement and innovation. This report classifies benchmarking efforts among three types — performance, diagnostic and process — and characterizes each by its typical use. The report also attempts to gauge the practical value of these various activities in order to judge their capacity to truly inform understanding of institutional productivity and effectiveness.

Too often, accountability policies require institutions to report data that are never actually used.

Too often, accountability policies require institutions to report data that are never actually used to guide decisions at the institutional or state levels. Because of this lost opportunity, the value of these efforts is often more symbolic than practical. To address this problem, the report says, "data-based decision-making" strategies must view campus-based practitioners — including academic and student services administrators, institutional researchers, faculty members and senior leaders — not only as decision makers, but also as potential agents of change.

A recent Lumina Foundation report by Thomas Bailey and Mariana Alfonso (*Paths to Persistence*, January 2005) underscored the importance of data-driven decision making, calling for institutions to create and maintain a "culture of evidence." Building on that idea, the author of this report suggests that the goal should instead be a culture of *inquiry*, one in which data move out of the limelight, and practitioners move to center stage. The report emphasizes that the

task of creating knowledge from data is best understood as a craft, and that the practitioner's role as craftsperson is critical.

As sociologist-author Richard Alford observes in *The Craft of Inquiry*: "Evidence never contains its own explanation." This is a caution, not only that data require analysis to convey meaning, but also that the very process of gathering and analyzing data is subjective. To exercise craftsmanship in the inquiry process, we must recognize that each of us brings personal perspectives and experiences to the interpretation of evidence. We must understand that how we decide what information to collect, whom to involve in data interpretation, and how to communicate results can be as important as the results themselves. This is the essential difference between a culture of evidence and a culture of inquiry: The emphasis shifts from the data to the decision-maker as the locus of change.

If peer comparison processes are to spur innovation and improve student success, the results of these comparisons must inform — and sometimes change — the thinking and behavior of instructors and administrators. Clearly, this fact has implications for professional development in community colleges. In a culture of inquiry that seeks to enhance student success, college administrators and faculty must do the following:

- Work to identify and address problems by purposefully analyzing data about student learning and progress.
- Engage in sustained professional development and dialogue about the barriers to student achievement.
- Have the capacity for insightful questioning of evidence and informed interpretation of results.

To support the development of cultures of inquiry in community colleges, this report reviews a variety of activities that seek to assess the performance of these colleges in promoting student success. Again, these activities fall into one of three different categories: performance benchmarking, diagnostic benchmarking and process benchmarking. A description of each type follows:

- **Performance benchmarking**, also called metric benchmarking, is simplest and takes place through the straightforward though often superficial comparison of performance data. This report provides a snapshot of accountability objectives and performance indicators in three New England states to demonstrate how performance benchmarking is typically used at the state level. The National Community College Benchmark Project (NCCBP), a voluntary effort by participating colleges, demonstrates a more sophisticated use of outcome indicators within a conceptual system — one that accounts for resource inputs and the different educational environments in which those resources are expended.

- **Diagnostic benchmarking** is a "health check" that seeks to characterize an organization's performance status and to identify areas that need improvement. The report examines this type of benchmarking by discussing several well-known national assessment efforts. These efforts employ surveys of community college student experiences, behaviors and attitudes — surveys that use educational research and theories as their diagnostic framework. Unlike performance benchmarking systems that tend to treat educational experiences as assembly-line processes, diagnostic systems see the student-college relationship as an interactive process — one that has a direct effect on student outcomes. Students are not passive "widgets" processed in an educational factory; they themselves contribute to their own outcomes.

The student role is characterized by the Community College Student Experience Questionnaire (CCSEQ) in terms of "effort" and by the Com-

munity College Survey of Student Engagement (CCSSE) in terms of "engagement." The Cooperative Institute Research Program (CIRP) focuses on broad indicators of students' experiences in college, as well as their precollegiate expectations. These diagnostic frameworks help administrators focus their attention on how to improve collegiate practice.

A different type of diagnostic benchmarking strategy is used in a project called Equity for All: Institutional Responsibility for Student Success. This project provides a framework for institutional self-assessment in which teams of administrators, faculty and institutional researchers begin by examining student outcome data disaggregated by race and ethnicity. These inquiry teams then collaboratively interpret the meaning of the data and use these interpretations to determine how to address observed inequities in student outcomes.

- **Process benchmarking** is the most expensive and time-consuming type of benchmarking. It involves an in-depth, comparative examination of a specific core practice at two or more institutions. Process benchmarking has been envisioned by educational researchers, who have begun to argue for systematic "quasi-experiments" designed to isolate the characteristics of teaching and learning systems. Because the federal government favors this strategy and has incorporated it into definitions of "rigorous" program evaluation, community college personnel can expect more invitations to participate in these types of experiments.

These experiments will be defined in terms of three critical features: (1) outcome measures; (2) descriptions of the optimal academic "treatment" conditions, including the tasks undertaken and instructional media employed in instruction; and (3) descriptions of the optimal teaching strategies associated with those tasks and technologies adopted to produce the specified outcomes. Such experiments — designed to be in-depth and precise — are a form of process benchmarking because they allow the participating organizations to observe how various methods of teaching or student service affect student outcomes.

Administrators and faculty members have many options for benchmarking activities on their campuses.

This review shows that administrators and faculty members have many options for benchmarking activities on their campuses — some of them mandated by state and federal governments. This report should help inform the development of these mandates because it explains the broad array of current benchmarking practices and provides a common language with which to distinguish their purposes. Benchmarking activities will most benefit those who understand the underlying theoretical frameworks and statistical foundations of the various approaches and can interpret results in the appropriate context. Clearly, this underscores the need for effective and ongoing professional development for community college practitioners. The report discusses a number of useful initiatives and resources designed to support this ongoing professional development.

Introduction

Community colleges have been described as experiencing a "perfect storm" of increasing enrollment pressures, declining public revenues, and unprecedented competition from the for-profit sector for students and public funds (Boggs, 2004). Another storm is brewing as legislatures and postsecondary associations continue a heated debate about the means by which colleges and universities should be held accountable for educating their students (*Accountability for Better Results*, 2005; Bollag, 2004; Burd, 2004; Fleming, 2004; Strout, 2004). Higher education's assessment movement is a countervailing force to the external pressures of accountability (Ewell, 1991; Moore, 2002), but the internal focus of assessment does little to appease the demand for public information about college productivity and effectiveness.

> The assessment movement is a countervailing force to external pressures of accountability.

In a provocative "challenge essay" featured in a recent report issued by the Education Commission of the States and the League for Innovation in the Community College, Kay McClenney argues that community college educators should ask themselves "hard questions" about student attainment to examine whether they are doing enough to ensure student success (McClenney, 2004, p. 11). "The urgent priority for [community colleges] is to be involved in shaping accountability systems so that they are appropriate to community college missions and students, and so that they serve rather than thwart the access and attainment promises," she writes (p. 13). McClenney, director of the Community College Survey of Student Engagement, maps a strategy to reach that goal, including emphases on building connections with secondary schools, providing effective remedial education, strengthening student engagement, and exercising transformational leadership. She also calls for a "new culture of evidence" (p. 14) in which questions about "student progress, student attainment, and student

success" are answered on campuses through careful data analysis. (See Page 6: "What is a culture of evidence?")

Community college administrators and institutional researchers who are participants in a Think Tank (see Appendix A, Page 36) facilitated by the New England Resource Center for Higher Education (NERCHE) have been discussing a related concept: the emergence from the accountability and assessment movements of a "culture of inquiry" (*Creating a Culture of Inquiry*, 2005). In the area of student success, a culture of inquiry is characterized by the professionalism of administrators and faculty who identify and address problems through purposeful analysis of data about student learning and progress. A culture of inquiry depends on the dispositions and behaviors of the people who teach in and administer programs at colleges. It requires their willingness to engage in sustained professional development and dialogue about the barriers to student achievement. A culture of inquiry depends on the capacity for insightful questioning of evidence and informed interpretation of results.

To help support the development of cultures of inquiry in community colleges, this report reviews a variety of higher education activities that attempt to assess the performance of colleges in promoting student success. (See Pages 20 and 21: "Assessment in the learning college.") Each is, in one way or another, a form of benchmarking. Why examine benchmarking practices? Higher education benchmarking activities, which are designed to compare performance at one college with other colleges or against a set of performance criteria, were spurred by legislative accountability initiatives, but they have evolved over time in response to educators' objections to simplistic indicators of college performance. Under tight budgets, state accountability programs have reduced the ties between college performance and funding and increased reliance on public reporting of results as a lever to promote institutional effectiveness (Burke & Minassians, 2003). The increased emphasis on information gathering, analysis and public reporting has been accompanied by a growing sophistication of administrative practices and options to measure performance. This means practitioners face a greater demand for professional knowledge and development in order to make informed choices in a complex arena. Benchmarking is not an essential component of a culture of inquiry, but many current assessment activities incorporate benchmarking strategies in one form or another.

The review of performance-measurement activities presented in this report is intended to provide needed context for making decisions in this increasingly high-pressure environment. This report draws on a series of discussions with members of a national advisory council formed to assist in an ongoing effort to enhance the success of students in the nation's community colleges. (See Appendix B, Page 37, for a listing of the members of the advisory council.) The report also draws on a lengthier paper presented at a symposium in Fall 2004 at Roxbury Community College in Boston, Mass. (Dowd & Tong, 2004). That paper is available at: http://www.faculty.umb.edu/alicia_dowd/ccssp/working_reports.htm.

What is a culture of evidence?

As part of the Achieving the Dream: Community Colleges Count initiative funded by Lumina Foundation for Education, Thomas Bailey and Mariana Alfonso (2005) have characterized a "culture of evidence" as one in which "institutional research functions play a more prominent role and faculty and administrators are more fully engaged with data and research about success of their students, using those data to make decisions" (p. 3).

The researchers provide suggestions for colleges wishing to develop a culture of evidence. A partial list of those suggestions includes:

- Assess and invest in the resources and skills needed for effective institutional research.
- Recognize that assessments of program effectiveness are difficult.
- Combine qualitative and quantitative research on student outcomes.
- Provide more opportunities for faculty and administrators to engage in the research process.
- Develop more systematic methods to publicize and disseminate research findings.
- Promote collaboration among institutional researchers at different colleges and between college and system research offices.

The report, which seeks to contribute to a "continuous conversation within and among the colleges, and with outside researchers and policy-makers" (p. 4), is available on the Lumina Foundation Web site at: http://www.luminafoundation.org/publications/PathstoPersistence.pdf.

What is benchmarking?

Benchmarking is essentially a process of comparison for purposes of assessment or innovation (Bender & Schuh, 2002). The objective typically is for an organization to understand its own activities, achievements and shortcomings through comparison with "peers." The peer group may be selected based on similar objective characteristics, such as enrollment size, or by the use of perceived best practices that are to provide a model for improved performance (Hurley, 2002). Benchmarking takes several forms, and a number of classification systems exist to differentiate them. Yarrow and Prabhu (cited in Doerfel & Ruben, 2002) define performance, diagnostic and process benchmarking in a manner that is relevant to higher education.

Performance benchmarking (also called metric benchmarking) is simplest and takes place through the straightforward comparison of performance data. This approach focuses "only on superficial manifestations of business practices" (Doerfel & Ruben, 2002, p. 6). *Diagnostic benchmarking* is characterized as a "health check" intended to assess an organization's performance status and identify practices that need improvement. The third approach, *process benchmarking*, is the most expensive and time consuming. It brings two or more organizations into an in-depth comparative examination of a specific core practice.

As discussed below, accountability systems have relied primarily on performance (metric) benchmarking. Elements of diagnostic benchmarking are emerging as accountability systems mature. Process benchmarking has been envisioned for higher education by researchers, who now argue for systematic "quasi-experiments" designed to isolate the characteristics of effective teaching and learning systems. This approach is consistent with the federal government's push for experimental designs to be used in federally funded evaluations of social and educational programs (*Rigorous Evidence, Scientifically-Based Research*). Given this emerging emphasis, more and more practitioners are likely to be invited in coming years to participate in national evaluation projects designed to compare the effectiveness of various aspects of federally funded programs.

Benchmarking takes several forms.

The new role of institutional research

The role of institutional researchers in community colleges has recently attracted a great deal of interest. Covering an event at the "Innovations 2005" conference of the League for Innovation, *The Chronicle of Higher Education* reported: "Community Colleges Should Rely More on Institutional Research, Conference Panelists Say" (Evelyn, 2005). A report of the National Commission on Accountability in Higher Education that advocated "explicit" and "demanding" standards for institutional research garnered similar attention (Fischer, 2005).

Drawing on a study conducted by the Community College Research Center at Teachers College, Columbia University, panelists at the League conference noted that many community colleges have no full-time institutional research (IR) position and that most IR departments are relatively young, having been created in the past decade to respond to accountability and reporting requirements. The panelists, including Robert Grabinger, dean of research and planning at City College of San Francisco, argued that IR offices should spend less time on "college management," such as preparing reports for accreditation visits, and more time providing leadership to "help colleges fulfill their mission." In particular, a "direct relationship" with the college faculty was advocated in order to bring professors and researchers together to conduct assessments of student learning.

In an essay published in the *Journal of Applied Research in the Community College*, Dan Walleri (2003), director of research and planning at Mt. Hood Community College in Oregon, describes the historical foundations of the IR role at community colleges and traces the evolution of the role. The essay provides a valuable characterization of the multiple functions played by IR offices, such as federal and state reporting, enrollment analysis and forecasting, compilation of college fact books, strategic planning, assessment and accreditation. In addition, the complexity of professional roles is highlighted through discussion of the expectations on researchers to navigate in political arenas and to act as the credible and objective "conscience" of the institution. Walleri's essay provides essential context for those seeking to reshape or capitalize on the institutional research function to foster student educational attainment.

Performance benchmarking

Through the use of performance indicators, state-mandated accountability systems have emphasized performance benchmarking (Barak & Kniker, 2002). Nationally, the most common indicators of student success for community colleges have been retention, transfer, graduation and job placement rates (Burke & Associates, 2002; Burke & Minassians, 2003). During the past two decades, states have been attempting, with uneven and unpromising results, to create funding systems that will prompt improved institutional performance. Joseph Burke, director of the higher education program at the Rockefeller Institute of Government at the State University of New York in Albany, has been tracking state performance funding initiatives since 1997 (see reports available at: http://www.rockinst.org/publications/education.html). The results of the seventh annual survey conducted by Burke and his colleagues of State Higher Education Finance Officers (SHEFO) demonstrate that it has been difficult to implement the political, sometimes merely rhetorical goal of changing a funding system based on inputs (such as enrollment) to one based on outputs (graduation rates).

Particularly during the most recent budget crises, several states have canceled or suspended performance initiatives tied to budgeting or funding, while others have diminished their expectations of adopting such a plan. Survey results indicate that the perceived impact of these programs on performance has declined and is frequently rated as minimal or moderate. In 2003, 46 states required performance reporting, but Burke and his colleagues noted the "modest" use of such reports for planning, policy-making or decision making. They described reporting requirements as "symbolic policies," which "appear to address problems, while having little substantive effect" (Burke & Minassians, 2003, p. 14).

> Several states have canceled or suspended performance initiatives tied to budgeting or funding.

The National Community College Benchmark Project

Among performance benchmarking efforts, the National Community College Benchmark Project (NCCBP) (www.nccbp.org), led by Jeffrey Seybert at Johnson County Community College in Kansas, is the most sophisticated system. The project is a voluntary effort by a group of community colleges that has grown from 20 to more than 150 in the past three years. In three state systems — Tennessee, Pennsylvania and SUNY in New York — colleges have enrolled together in the project to enable statewide comparisons on NCCBP indicators. The NCCBP indicators represent a systemic relationship between inputs from the college community and student outcomes. The project also seeks to compare the level of classroom resources among participating colleges and to observe fine-grained student outcomes. Table 1 (Page 25) provides a listing of NCCBP indicators. (For complete information, see the glossary of benchmarks at the project's Web site: http://www.nccbp.org/_FileLibrary/FileImage/Glossary2005.pdf.)

The failure of performance accountability plans to consider differences in student preparation, motivation and aspirations often generates strong objections from practitioners. It is not surprising, then, that the NCCBP, which is advised by a knowledgeable and experienced board of practitioners, includes measures of student satisfaction and goal attainment along with more typical state-level indicators of persistence, degree completion and transfer. As community college practitioners often point out, not all students wish to attain degrees or certificates.

The NCCBP indicators also account for other forms of diversity among community college students. Student progress through developmental courses is recognized, as is the performance of transfer students in the four-year sector. The occupational training function is recognized by tracking the employment status of former students, and by including employers' satisfaction rankings of students trained at the college. The participation rates of students from minority groups traditionally underrepresented in higher education are compared to the minority population in the college's service area.

In addition, the NCCBP includes a series of input indicators that give a sense of relative resources available to produce outcomes. These include class size, student-teacher ratios and training expenditures. The project also enables peer group selection to take account of differences in community wealth by recording service area unemployment rates and median income. Colleges can also select peers with operating budgets of similar size. Since participation in the NCCBP is voluntary, the colleges can select their peer group criteria based on their decision-making and strategic-planning needs. This differs from peer group creation processes for accountability purposes, where colleges may find themselves assigned through politically sensitive processes to groups that may or may not be appropriate for informative performance comparisons. (See Page 11: "Selecting peer groups: An art and a science.")

As community college practitioners often point out, not all students wish to attain degrees or certificates.

Performance reporting for state accountability

A closer look at accountability objectives and performance reporting requirements in three New England states reflects national trends and illustrates the current status of such policies. Table 2, Higher Education Accountability Objectives and Performance Indicators (Pages 26 and 27), presents information on accountability plans in Connecticut, Maine and Massachusetts to provide current examples of the variation in the types of information gathered and the extent to which accountability is

Selecting peer groups: An art and a science

Peer comparisons have become a popular component of performance accountability systems and assessment practices. But how are peer groups identified? Peer selection often combines objective data analysis and political wrangling, as college leaders seek to position their institution well in relation to the peer group for subsequent performance reports. Administrators, institutional researchers, state system analysts and external consultants are among those who get involved in identifying a group of potential peers. During this process, administrative leaders, in particular, watch for potentially negative funding and public relations implications. Throughout this process, each institution remains aware of its unique characteristics and those of the communities and students it serves. It is likely no peer group will ever be considered perfect by all interested parties, especially when comparisons are used to mark some institutions as "underperforming."

For those navigating the political waters of peer group selection, several resources describing the "science" of selection processes are available. The most comprehensive treatment is provided by a recent entry in the New Directions for Community Colleges series, available from Jossey Bass Publishers. Alexander McCormick and Rebecca Cox (2003) edited *Classification Systems for Two–Year Colleges*, which includes chapters considering groupings based on institutional characteristics, curricular emphases and market orientation. *The Community College Review* also recently published an article by Rodney Hurley (2002) that reviews the types and purposes of community college peer groups and the analytical strategies for creating them. Though focused on the four-year sector, an article by Sharon Weeks and colleagues (Weeks, Pucket & Daron, 2000) that appeared in *Research in Higher Education* explicitly tackles the tension between politics and objective analysis and describes the authors' efforts to find a meaningful balance between the two.

truly focused on performance outcomes. In Connecticut and Massachusetts, performance reports are required as part of the budgeting process. The accountability objectives in Maine were developed through a voluntary effort on the part of the colleges in response to a perceived need to be proactive in providing public accountability. Table 2 provides a summary of performance reporting standards from public documents available on the state system Web sites in Fall 2004. It is important to note that this summary is a "snapshot" from a particular point in time. Standards often change from year to year within a state, and a gap often exists between formally adopted standards and those in use. The three states differ in the extent to which they present their accountability plan in terms of objectives or indicators. Thematic titles or groups of indicators have been retained in Table 2 where presented by the state, but the groupings have been reordered for cross-state comparison.

The performance accountability movement was intended to highlight institutional results to motivate increased productivity. As expected, the performance-reporting standards in Table 2 include many outcome indicators. These include the expected measures of student persistence, certification, transfer and graduation rates, which are found in Section 1 of the table. Maine and Massachusetts also seek to measure student satisfaction, reflecting the desire to include indicators that judge commu-

nity college effectiveness based on colleges' ability to assist students in meeting their goals, which do not always include obtaining a credential. All three states also include enrollment among the reporting standards (as shown in Section 2 and in Section 3), which emphasizes the numbers of students being prepared in occupational fields. Occupational performance outcomes such as employment rates also are included in Section 3.

The cost-effectiveness of different types of higher educational programs and administrative practices has rarely been studied in rigorous terms. The performance-reporting standards from these three states suggest movement in that direction through categories of indicators intended to measure resource efficiency, as indicated in Section 4. These standards appear to be in their infancy because they attempt to measure complex relationships between resource use and student outcomes at high levels of aggregation. For example, in a category of indicators called "resource efficiency," Connecticut reports operating expenditures per student in conjunction with graduation rates. Similarly, Massachusetts reports the percentage of educational and general expenditures in administrative areas, with an eye toward keeping administrative spending low. Neither strategy offers great promise for an understanding of the most effective use of available resources to achieve optimal student outcomes because the gross measures of inputs and outputs provide no information about actual resource use for a wide variety of instructional and administrative activities. Maine states the objective of observing and reporting "efficient utilization" of funds but does not offer ways to measure such efficiency.

The NCCBP collection of information about class sizes, student/faculty ratios, instructional faculty loads and training expenditures, along with fine-grained student outcome indicators at the level of course type, is preferable to these state-level attempts at measuring efficiency. However, even for the NCCBP participants, the challenge remains to link resources and student outcomes within particular curricular and programmatic areas. These shortcomings mainly illustrate the limitations of performance benchmarking, which may call for reports of inputs and outputs but does not offer a mechanism for understanding how resources are used effectively. That is the task of the admittedly more complicated and expensive form of peer comparisons called process benchmarking, which is discussed below.

It is not fair to hold institutions accountable for achieving equal outcomes with unequal resources.

The development of feasible strategies to measure institutional cost-effectiveness would mitigate the strong and legitimate objection often raised by practitioners to performance accountability: It is not fair to hold institutions accountable for achieving equal outcomes with unequal resources. This is particularly true when colleges enroll students with varying developmental needs and when resource disparities among colleges in the same state are often quite large (Dowd & Grant, forthcoming-a, forthcoming-b).

The final two sections of Table 2 include indicators of instructional design and collaboration within higher education and between higher education and high schools. These indicators focus on processes that are expected to enhance performance. The inclusion of narrative descriptions as part of the reporting requirements highlights the difficulty of reducing all forms of valued activities to countable pieces of evidence. Maine, in particular, with its voluntary reporting system, establishes the use of data collection, analysis and reporting processes as valuable in and of themselves to inform performance-enhancement goals.

Notably, Maine also calls for a performance standard of expenditures on professional development. This standard, which was set in 2004 at 2 percent of each college's operating budget, serves

as a recognition (unusual in accountability plans) that education is a complex endeavor and that achieving higher performance will require higher levels of professional knowledge and training. Professional development activities appear to be chronically underfunded in community college systems, with many institutional researchers, faculty members and administrators receiving minimal funding, or even no funds, for travel to professional conferences.

To improve institutional performance, Maine's voluntary reporting strategy may well be the best approach. Scholars have argued that it is simply not possible to impose accountability (Koestenbaum & Block, 2001), particularly in high-pressure public and political arenas. The moment an institution's weaknesses are to be exposed publicly, numerous organizational defenses will be stimulated to deflect criticism rather than to undertake real reform (Dowd & Tong, 2004). Connecticut's accountability system presents a best-practice strategy in this regard. Public reports group results by categories of institutional size that include at least three colleges. Academic studies involving practitioners show that administrators and faculty who engage in in-depth data analysis often become agents of change on their campuses when the inquiry process involves them in deciding which student outcome indicators to examine (Bensimon, 2004; Bensimon, Polkinghorne, Bauman & Vallejo, 2004).

Diagnostic benchmarking

To address the limitations of performance benchmarking to inform understanding of the processes that influence student outcomes, many community colleges have begun to adopt assessment instruments and procedures marketed by several national organizations. These assessments center on surveys of student attitudes and behaviors, as well as their satisfaction with various aspects of the collegiate experience. As the same questionnaires are adopted by peer institutions nationwide, the results create national databases and provide a resource for institutions to conduct diagnostic benchmarking. (See Page 15: "Adopting a national survey or assessment instrument?") The diagnostic checks and recommended institutional review procedures vary with each assessment instrument, but each offers an explanatory framework for analyzing results and planning for institutional improvement. By adopting a nationally available survey rather than designing their own, colleges can then compare their institutional results to national norms and engage in strategic planning to improve their practice.

Community colleges have begun to adopt assessment instruments and procedures marketed by several national organizations.

National surveys of student attitudes, experiences and behaviors that provide benchmarking data for participating colleges include the Community College Student Experiences Questionnaire (CCSEQ), the Community College Survey of Student Engagement (CCSSE), the Cooperative Institutional Research Program (CIRP), the Faces of the Future survey from AACC in collaboration with ACT, the Student Opinion Survey from ACT, and the Noel-Levitz Student Satisfaction Inventory (SSI). The models and measurement characteristics underlying these surveys are summarized in Table 3 (Pages 28-30).

The designs of the first three surveys presented in Table 3, the CCSEQ, the CCSSE and the CIRP, are based on educational research and theories.

Adopting a national survey or assessment instrument?

The American Council on Education in collaboration with the Association for Institutional Research (AIR) published a comprehensive guide to nationally available surveys and assessment tools in 2001. *Measuring Quality: Choosing Among Surveys and Other Assessments of College Quality* by Victor M. H. Borden and Jody L. Zak Owens provides a thoughtful decision guide and a table summarizing report information, availability of national comparison data, options for adding local questions and subscribing as a consortium, cost and complete contact information. The table includes assessments of student outcomes and academic proficiencies, as well as of faculty, administrators and alumni. It includes assessment tools for all sectors of higher education, but instruments designed specifically for community colleges and their students are well represented.

Though many assessment instruments have evolved since the guide's publication in 2001, the classification of survey types and the decision framework are invaluable. Characterizing the assessments as "information tools for both accountability and improvement," the authors set out three general criteria for determining their usefulness: "The appropriateness of the tool for the specific job at hand; the skills and experiences of users; and the availability of sufficient financial, personal, and material resources" (p. 3).

The guide is available for free download at the AIR Web site: (http://www.airweb.org/).

Student outcomes are conceptualized as resulting from the student's experience in the college environment. The student-college relationship is interactive. Students are not passive "widgets" processed in an educational factory. Students themselves contribute to their own outcomes. The student role is characterized by the CCSEQ in terms of "effort" and by the CCSSE in terms of "engagement." The CIRP focuses on broad indicators of students' experiences in college, as well as their pre-collegiate expectations.

Engagement, as measured in the CCSSE, is not a single construct. It is a family of five types of indicator categories, or benchmarks, drawn from studies of student learning and persistence that are thought to influence a student's academic success (*Engagement by Design*, 2004; Marti, 2004). As in the CCSEQ, these include student effort as one of five benchmarks. Among the other four CCSSE benchmarks, three are determined interactively by student behaviors and the college environment. These are active and collaborative learning, the level of academic challenge, and student-faculty interaction. The college clearly has a role to play in these areas in creating effective learning environments to facilitate student effort. The fifth category of indicators, support for learners, represents an area that is the responsibility of the college. A college's survey results serve as diagnostic indicators of areas of strength or needed improvement. For example, a college observing relatively low levels of student-faculty interaction might adopt policies concerning faculty advising, structured orientations or curriculum changes.

The remaining three surveys in Table 3 — the Faces of the Future survey (FOF), ACT Student

Communities of practice effecting change

How will collecting data about student outcomes contribute to effective educational practices? Research conducted as part of the Diversity Scorecard Project at the University of Southern California's Center for Urban Education suggests that it is essential to involve campus practitioners in defining problems of student success (Bensimon, et al., 2004). The Diversity Scorecard Project, which is directed by Estela Mara Bensimon, has been implemented in 21 two- and four-year public and private colleges in six states. It is also the foundation for a new project, Equity for All: Institutional Responsibility for Student Success, which is funded by Lumina Foundation and the Office of the Chancellor for the California Community Colleges and will involve 10 community colleges in that state.

Writing in *Change* magazine, Bensimon (2004) explains that the Diversity Scorecard is a framework for institutional self-assessment that starts with campus teams of administrators and institutional researchers examining student outcome data disaggregated by race and ethnicity. The team then draws conclusions about inequities in student outcomes and establishes performance goals for addressing the problems they have identified. Team members often then take on the role of change agents in earnest. The Diversity Scorecard Project illustrates that when faculty, administrators and institutional researchers generate knowledge of problems on their own campus, their engagement in the process of knowledge creation contributes to their openness to arguments for change and their willingness to advocate for new policies and practices.

The strategy of the Diversity Scorecard and Equity for All projects is to help faculty, administrators and researchers act "self-reflectively and collaboratively within everyday practice" (Bensimon et al., 2004, p. 109). In this way, practitioners are at the center of data interpretation for the purpose of informing knowledge, beliefs and actions. Organizational learning takes place within a community of practice that has the capacity to foster student success.

The inquiry teams meet several times to examine fine-grained institutional data on student outcomes. These analyses provide the basis for benchmarking institutional improvement on four sets of "vital signs" that function as diagnostic indicators: academic pathways (e.g., vocational or academic tracks), retention and persistence, transfer readiness, and excellence (e.g., enrollment in competitive majors or honors programs).

Each college chooses its own set of indicators and benchmark goals. However, the project provides a structured assessment process that is shared among participating institutions. Colleges complete an Equity Scorecard and present their findings in terms of a standardized Equity Index, a ratio of the percentage of students in different racial and ethnic groups attaining specified educational outcomes and their percentage in the relevant community population.

The Equity Scorecard and the Equity Index provide a standardized benchmarking process and indicators, both of which facilitate cross-campus comparison about the assessment processes that support organizational change and help reduce inequalities in educational attainment.

Opinion Survey (SOS) and the Noel-Levitz Student Satisfaction Inventory (SSI) — in addition to noting student characteristics and expectations, focus on student satisfaction across the gamut of collegiate administrative functions. The SSI, for example, measures satisfaction with academic advising, instruction, safety, registration, academic support and other functions, for a total of 12 areas of student concern. Checking the health of an organization against a series of "dashboard" indicators of this type is the hallmark of diagnostic benchmarking. With this type of assessment, colleges can maintain or improve a consumer service orientation and allocate resources to improve weaknesses. Particularly when paired with the use of surveys based in educational theory, surveys of student satisfaction can serve as valuable management tools for improving campus functions. On their own, though, they are unlikely to provide insight into steps that may be necessary to educate students more effectively or to raise students' expectations for their own performance. (For another type of diagnostic benchmarking, see "Communities of practice effecting change," Page 16.)

The growing use of such uniform, professionally designed and theoretically contextualized surveys is part of the growing sophistication of higher education benchmarking. When grounded in educational research, these indicators provide explanatory frameworks for college student outcomes in ways that performance measures, which grow out of business and policy perspectives, do not. As shown in Table 3, tests of reliability for questions on five of six of the surveys are readily available. The generally high scores on the statistic representing the consistency of respondent answers (Cronbach's alpha coefficient) demonstrates that the questions are understood by respondents and are well designed. Tests of validity, which indicate whether the questions measure what is intended and whether those measures are relevant to the ultimate outcomes of interest, are also readily available for four of six surveys. Validity is trickier to establish, and the survey designers draw on the educational literature, interviews with students and expert reviewers, and multivariate statistics for this purpose (Ethington, Guthrie & Lehman, 1999; Ethington & Polizzi, 1996; Marti, 2004; Ouimet, Bunnage, Carini, Kuh & Kennedy, 2004; Pace, 1999).

Though the surveys are professionally designed and commercially marketed, their adoption on campuses does not reduce the burden on administrators and institutional researchers to understand the technical aspects of the questionnaire design. (See Page 18: "Designing a survey?") On the contrary, it may increase the need for professional education and development in this area so decisions about which survey to administer at different points of an institution's assessment and planning cycle are well informed.

One limitation of these surveys to inform understanding of institutional performance and effectiveness is suggested by studies of institutional climate, student identity development and cultural adaptation in educational settings (Dowd & Korn, 2005). The conceptual frameworks underlying surveys of student attitudes and behavior are not strongly informed by studies of campus climate, which emphasize issues of cultural difference, conflict, dominance and discrimination. The theories of attrition and persistence that informed the development of the scales to measure "effort" and "engagement" (Astin, 1993; Pascarella & Terenzini, 1991; Tinto, 1987) are now being revised by a new generation of scholars who emphasize the demands on students of acting as "cultural workers" to create spaces on the campus where they feel at home (González, 2001) and of developing bicultural identities and networks (Nora, 2001-2002; Rendón, Jalomo & Nora, 2000).

The importance of student effort to maintain supportive relationships within one's own cultural affinity group, which may be termed "cultural effort" (Dowd & Korn, 2005), was not envisioned by the theoretical underpinnings of student-institution fit models, so it is not measured. For example, questions measure students' efforts to interact with faculty and with students whose cultural backgrounds differ from their own. Theories of cultural identity and student development suggest the need

for additional items that measure students' efforts to maintain strong ties with their families and home communities, as well as with other students on campus who share their cultural heritage.

Though the literature suggests that feelings of marginalization and discrimination would certainly contribute to student attrition, these concepts are not measured in national instruments. Colleges can pursue two strategies to better understand these issues.

The first strategy is to conduct focus groups with students to explore the effects of campus climate, services and curriculum on students' feelings of belonging or alienation on campus. Focus groups provide the opportunity to explore factors not captured on standardized measures and to customize inquiry to specific institutional and community contexts.

The second strategy is the design of local surveys by institutional researchers in collaboration with administrators and faculty. The items for inclusion can also be identified through the focus groups and by pilot testing of the survey on campus. The results of such efforts would suggest new avenues for college performance in regard to facilitating community connections and family involvement on campus.

Such pairings of focus groups with the administration of local and national surveys are likely to emerge as a best practice for assessment as benchmarking practices continue to evolve. In conducting focus groups, however, administrators and institutional researchers must be mindful of their role as college "insiders" (Banks, 1998) and actively structure focus groups in ways that will generate "outsider" perspectives. The creation of consortia of institutional researchers who can trade off in research roles on each other's campuses may be a cost-effective way to avoid insider bias. Focus group research of this type will likely contribute to the development of the next generation of national surveys.

Three types of comparisons are available to colleges that administer national surveys. The first is comparison of institutional scores to national norms. The second is comparison of institutional scores to those of a smaller number of peer institutions. The third is comparison of the portrait that emerges of college priorities and practices against the institution's stated mission. These comparisons may alert campuses to issues needing attention. However, to motivate institutional change and promote effective practices, they must also be part of in-depth discussions to frame understanding of the nature of the problems to be addressed.

Designing a survey?

A primer describing survey design and administration techniques called *What Is a Survey?* is available free of charge on the Web at: http://www.whatisasurvey.info/. Authored by Fritz Scheuren (2004), who edited a series by the same name for the American Statistical Association, this resource includes chapters on survey planning, collection and quality. It also describes the value of complementary strategies such as focus groups and cognitive pre-test interviewing. The guide is written in accessible language suitable for non-specialists.

The Association for Institutional Research (http://www.airweb.org/), through its Resources for Institutional Research series, has available for purchase *Questionnaire Survey Research: What Works* (1996) by Linda A. Suskie. This comprehensive guide includes survey planning and design topics, as well as discussion of statistical reliability, validity and data analysis. It is written in a clear, concise manner with specific applications to higher education contexts.

Process benchmarking

Process benchmarking has been relatively absent from accountability plans because of its greater expense and time requirements, but interest in this approach has grown recently. In keeping with the federal government's stated preference for funding experimental and quasi-experimental research to identify effective educational practices (*Rigorous Evidence; Scientifically-Based Research*), researchers have recently proposed the development and adoption of educational experiments, or "regimes," to assess institutional productivity. These experiments would be defined in terms of three "critical features": (1) outcome measures; (2) descriptions of the optimal academic "treatment" conditions, including the tasks undertaken and instructional media employed in instruction, and (3) descriptions of the optimal teaching strategies associated with those tasks and technologies adopted to produce the specified outcomes (Cohen, Raudenbush & Ball, 2003, p. 135). Such experiments are a form of process benchmarking because organizations participating in them would have the opportunity to observe how variations in teaching or student service methods affect student outcomes. The examination of the "production" processes of education under this type of process benchmarking is intended to be in-depth and precise.

Researchers have recently proposed development of educational experiments, or "regimes," to assess institutional productivity.

Because the federal government now favors the use of experimental designs for the evaluation of federally funded programs such as TRIO and GEAR Up, community college faculty and administrators can expect to be invited with increasing frequency to participate in experiments designed to test the effectiveness of different educational and administrative strategies. This type of process benchmarking dovetails with the assessment movement. Through their internal assessment efforts, community college educators and researchers have already begun to closely define learning outcomes, performance

requirements and competencies (*An Assessment Framework*, 2004). (See below: "Assessment in the learning college.") Participation in experimental regimes will, nevertheless, present challenges, particularly due to the high level of human resources required for sustained participation and collaboration with faculty and administrators in other colleges. While assessment efforts are generally focused internally as a college effort, experimental evaluation designs are likely to require colleges to make detailed comparisons of their educational practices and outcomes with other institutions.

Assessment in the learning college

Long before the current interest in data-driven decision-making, community college leaders were actively defining and assessing learning environments that foster student success. The concept of learning-centered colleges has generated important assessment principles for observing student experiences and outcomes (Barr & Tagg, 1995; Chickering & Gamson, 1987; Ewell, 1991, 1997; O'Banion, 1997, 1999; Tagg, 2003).

In fact, as characterized by Kay McClenney (2003) in a recent article in the American Association for Higher Education's ***Inquiry & Action,*** assessment practices are among the defining characteristics of learning-centered colleges. In the article, McClenney highlights six key characteristics — each paired with a rationale for its importance and examples of systems, processes, policies and practices — that serve as evidence of being learning-centered:

1. The institution has clearly defined outcomes for student learning.
2. The institution systematically assesses and documents student learning.
3. Students participate in a diverse array of engaging learning experiences aligned with required outcomes and designed in accordance with good educational practices.
4. Data about student learning typically prompt — and support — the institution and individuals to reflect and act.
5. The institution emphasizes student learning in its processes for recruiting, hiring, orienting, deploying, evaluating and developing personnel.
6. Key institutional documents and policies, collegial effort and leadership behavior consistently reflect a focus on learning.

The League for Innovation in the Community College also recently issued a resource guide describing the principles of a "learning college" and providing examples of their application. "An Assessment Framework for the Community College: Measuring Student Learning and Achievement as a Means of Demonstrating Institutional Effectiveness" (***An Assessment Framework, 2004***) is available at: http://www.league.org/publication/whitepapers/0804.html.

The guide stresses the importance of a shared assessment vocabulary among stakeholders so that meaningful discussions of assessment implementation may take place. It also provides an eight-step process for developing and implementing assessments. This process is illustrated by case studies chronicling the problems faced by four community colleges, how each college developed and implemented assessment strategies reflective of institutional distinctiveness, and the results of their efforts.

Assessment in the Learning College (continued)

The following steps for the development and implementation of assessments are reproduced from pp. 16-17 of the League's framework:

1. Define measurable institutional learning outcomes. Establish outcomes at the institutional, program, major, course and classroom levels.
2. Design assessments to measure learning outcomes. Determine the outcomes to measure; determine the purpose for the assessment; determine the assessment method to employ, and determine the kind of assessment data you need to collect.
3. Design learning events based on learning outcomes. Include assessment activities within the learning designs.
4. Deliver learning.
5. Assess learning and learning events.
6. Gather and format data generated from assessment activities.
7. Interpret the assessment data.
8. Use assessment data to make decisions at the student, classroom, course, major, program or institutional level.

Along with this holistic view of colleges as learning-centered has come a need for organizational structures that integrate teaching and learning in and out of classrooms. Many community colleges have begun reorganizing to become "learning-centered." Today, with learning paradigm concepts part of our everyday language of higher education, the challenge is to measure and demonstrate the effectiveness of these new organizational structures in promoting holistic student learning.

In a recent working paper, Esposito and Dowd (2004) describe the reorganization of Paradise Valley Community College (PVCC) in Arizona to illustrate the significant, long-term institutional effort necessary to become a learning-centered institution. The elements of an institutional commitment to transformation are illustrated by the case of PVCC, one of 10 Maricopa County Community Colleges that were pioneering colleges in the larger movement toward a learning paradigm. The report is available at:
http://www.faculty.umb.edu/alicia_dowd/ccssp/working_reports.htm.

Note: The text for this sidebar was prepared by research associate Linda Kent Davis.

Discussion

Benchmarking practices in higher education have evolved and are becoming increasingly sophisticated. Administrators and faculty members have numerous options regarding the kinds of activities to participate in and support on their campuses. Some participation is mandated by state and federal governments. To inform the development of these mandates, practitioners will benefit from knowledge of the broad array of benchmarking practices now in use across the country and, as provided in this report, a language with which to distinguish the purposes of these practices. Benchmarking activities will be most beneficial to those who understand the underlying theoretical frameworks and statistical foundations of various approaches and can interpret results in the appropriate context. The task of gaining this knowledge certainly creates a greater need for professional development, training and education.

If peer comparison processes are to spur innovation, the results must inform attitudes and behaviors.

If peer comparison processes are to spur innovation, the results must inform the attitudes and behaviors of faculty and administrators regarding the best strategies for ensuring student success. The notion of a culture of inquiry puts practitioners at the center of change efforts. (See Page 16: "Communities of practice effecting change.") As sociologist Richard Alford emphasizes in his engaging text *The Craft of Inquiry*, "Evidence never contains its own explanation" (1998, p.29). Evidence does not stand independently as true or meaningful. Recognizing the craftsmanship in the inquiry process entails recognition of the personal perspectives and experiences we all bring to the interpretation of evidence. It means that the preparation and process for deciding what information to collect, whom to involve in data interpretation, and how to communicate results are as important as the results themselves. This is the critical difference between a culture of evidence

and a culture of inquiry: The emphasis shifts from the data to the decision-maker as the locus of change.

The following questions, which highlight the importance of the decision process, are ones administrators should ask before embarking on peer comparison activities:

1. How well does the benchmarking strategy match my understanding of the problem?
2. Will the results be compared against an appropriate comparison group?
3. Will the strategy inform my understanding of the problem?
4. Will new understanding of the problem provide insights for solutions?
5. Will we be prepared and willing to make the changes indicated?
6. How will we incorporate these insights into our practice?
7. Will these solutions be consistent with our mission?
8. Who needs to be involved in order to effectively interpret and implement changes?

An additional set of important questions concerns the relative costs and benefits of the variety of benchmarking options available.

9. What are the direct costs of the bench marking project?
10. What are the indirect costs of human resources to complete the activity and adopt solutions?
11. Will the services of an outside consultant be required to facilitate difficult reflective discussions about the nature of problems?
12. What professional training and development is needed for those who participate in the activity or whose work is affected by adopted solutions?
13. What kind of support, communication processes and resources will be needed to enable participants to sustain engagement in the project for its duration?
14. What is the value of the anticipated benefits?

These questions reflect the high degree of professionalism required for colleges to effectively engage in benchmarking activities with peer institutions and sustain the inquiry process in ways that will support educational best practices. Questions 10-13 focus on the human resource demands. The need for professional education and training in this era of high standards and accountability is clear. Whether adequate financial resources have been allocated by states and colleges to fund ongoing professional development is not clear. Maine is one state that sets a performance-reporting standard for professional-development expenditures. Is 2 percent of a community college's operating budget an adequate level of expenditure for professional development? The question deserves further attention. How does this level of spending compare with typical expenditures for professional development and training in the business sector or in private research universities?

There is widespread recognition of the challenges community colleges face in educating diversely prepared students to achieve a wide range of educational goals. Enthusiasm for accountability plans that function through "carrot and stick" strategies is due, thanks to a growing sense of their ineffectiveness (*Accountability for Better Results*, 2005). During the era of accountability, the tools and strategies for benchmarking institutional performance and effectiveness have evolved and grown increasingly sophisticated. These developments owe as much to the collegiate assessment movement, which has focused independently on characterizing good teaching and learning environments, as to accountability pressures. A new era of accountability will hold greater promise for informing effective educational practice if it incorporates respect for the professionalism and professional development needs of community college administrators and faculty as a central tenet.

Tables

Table 1: National Community College Benchmark Project performance indicators and peer-selection criteria

Outcome indicators

Certificate, degree completion and transfer rates.
Credit course persistence and success rates.
Performance in transfer institutions.
Student satisfaction ratings.
Student goal attainment.
College-level course retention and success rates.
Developmental course retention and success rates.
Developmental student success in first college-level courses.
Business and industry courses (includes vocational training and professional education at business sites).
Career program completers' employment status and employer ratings.
Success rates in core academic skill areas.
Institution-wide grade distribution.

Input indicators

Enrollment rate: the proportion of the service area population enrolling in credit or non-credit courses.
Community participation rate: the proportion of the service area population participating in cultural activities, public meetings and sporting events on campus.
Minority student participation rates.
Service area high school graduate enrollment rates.
Average credit section size.
Student/faculty ratio.
Instructional faculty load.
Expenditures per credit hour and FTE student.
Student/student services staff ratio.
Training expenditures per employee.

Peer-selection criteria

Unrestricted operating budget.
Percent operating revenue from state.
Faculty unionization.
Service area population.
Service area unemployment rate.
Service area median household income.
Service area percent traditionally underrepresented minority students.

Source: The National Community College Benchmarking Project, www.nccbp.org. This is a partial list of performance indicators and peer-selection criteria; for a full listing and definitions, see the glossary of data elements on the project Web site.

Table 2: Community college accountability objectives and performance indicators: three states

Indicator category	State	Objectives and/or categories of indicators
1. Student outcomes	Connecticut	License and certification exam performance; transfer to four-year colleges and into community colleges. *Five indicator categories, including general enrollment.*
	Maine	Achieve standards of quality in core services of the System and colleges. *Four indicators regarding student satisfaction with core services, graduate certification and licensure, faculty and staff professional development.*
	Massachusetts	Improve student access and achievement. *Four indicators, including credit course completion rates, first-year retention rates, number of degrees and workforce certificates awarded, and nursing exam pass rates.* Recruit and enroll qualified students. Provide high-quality learning opportunities. *Three indicators of student satisfaction regarding quality of learning experience, workforce preparation, and academic preparation for four-year sector.*
2. Enrollment, access, affordability	Connecticut	Minority enrollment; operation expenditures from state support; real price to students. *Three indicator categories, including appropriations for student financial aid.*
	Maine	Increase enrollment to at least 15,000 matriculated students through increased capacity, accessibility and affordability. *One indicator for non-matriculated enrollment growth and two categories of process requirements for goal-setting, data-gathering and reporting regarding student retention.* Continue to foster and enhance an environment that promotes diversity. *One process requirement for assessing diversity, setting diversity goals, and monitoring progress.*
	Massachusetts	Ensure accessibility to affordable higher education for all residents of the Commonwealth. *Six indicators, including enrollment, minority enrollment, tuition and fee charges relative to median income and total revenues, and financial aid awards.*
3. Economic and workforce development	Connecticut	Degrees conferred by credit program; reports to the Connecticut Employment and Training Commission report card on employment and training program. *Two indicator categories, including employment at graduation and six months later.*

Table 2: Community college accountability objectives and performance indicators: three states (continued)

Indicator category	State	Objectives and/or categories of indicators
	Maine	Be an educational leader in economic development and an innovative contributor to economic growth. *One category of indicators regarding credit, non-credit and contract training enrollments serving business and industry.* Complete the transition to comprehensive two-year community colleges. *Two indicator categories regarding the proportion of occupational programs offered and maintenance of program standards and one process requirement regarding monitoring of course offerings.*
	Massachusetts	Respond to specific needs of the workplace. *Five indicators of workforce development enrollment, workforce placement, cost-sharing with business and industry, and transfer of workforce training students to the four-year sector.*
4. Resource efficiency	Connecticut	Real cost per student; retention rates; graduation rate; enrollment by credit program. *Four categories of indicators.*
	Maine	Assure that the community colleges have adequate financial resources to fulfill their mission by securing and maintaining increased state appropriations and federal, private and alternative funding, and by the efficient utilization of such funding. *Two indicators of investments in capital assets and a process requirement for monitoring capital planning and budgeting.*
	Massachusetts	Ensure cost-effective use of resources and manage campuses efficiently. *Three indicators of resource allocation to capital renewal, administration and other expenditure categories, and one process requirement for a financial audit.*
5. Collaboration	Connecticut	Collaborative activities with public schools. *No indicators. Report evidence of activities and K-12 program support.* Responsiveness to societal needs. Non-credit instruction; collaborative activities within the community. *One category of indicators, including personal and workforce development, and a category requiring narrative descriptions of collaboration.*
	Massachusetts	Promote collaboration among the campuses and with private higher education. *Two indicators of cost-sharing with other institutions and student transfer.*
6. Instructional design	Maine	Use technology-mediated delivery methods that best serve the evolving needs of students. *Two indicators of program delivery through computer technology and online course offerings.*

Table 3: Comparison of surveys of community college students' experiences, behavior and attitudes

SURVEY	Community College Student Experience Questionnaire (CCSEQ)	Community College Survey of Student Engagement (CCSSE)
Focus	Focuses on the quality of effort expended by students in academic areas, including in and out of class. Also assesses progress toward education goals, satisfaction with environment, and collects demographic and background information. (CSEQ is the alternate form for four-year colleges.)	Focuses on institutional practices and student behaviors that research associates with positive collegiate outcomes ("engagement"). (NSSE is the alternate form for four-year colleges.)
Theoretical foundation	Based on the observation that student effort affects academic achievement, satisfaction and persistence.	The concept of engagement is derived from student persistence and learning theory. (The theoretical foundation for each question on the survey is presented by a link on the CCSSE Web site.)
Measurement	Measures quality of effort in eight distinct areas of college activity, based on multi-item scales. Each item in the scale measures activities that require incrementally greater effort. Also measures student gains on 25 desired learning and personal development outcomes. Sampling: Purposeful sampling stratified by class type and time.	Measures five areas of collegiate experiences: active and collaborative learning, student effort, academic challenge, student-faculty interaction, support for learners. These five benchmark scales were constructed based on factor analysis and expert judgment of educational researchers. Sampling: administered in randomly selected classes, stratified by class time, as established by CCSSE staff.
Benchmarks/ reporting of results	The data are provided to the institution along with a descriptive statistical report of institutional results and the aggregated results for the annual population of participating colleges. Further data analysis is available for an additional fee. National aggregate scores are reported in the CCSEQ Test Manual and Comparative Data (Ethington, et al., 1999), based on an analysis of 18,000 students in more than 60 colleges.	Results are provided for all CCSSE participants, different subgroups within the full population, and individual colleges. Results include national and institutional scores on the five benchmark scales. Reported annually in *Engaging Community Colleges: National Benchmarks of Quality Summary*.
Reliability & validity	Using Cronbach's alpha as a measure of internal consistency, the coefficients for eight scales measuring quality of effort in collegiate activities ranged from .82 to .93. Validity is established by the cohesiveness of constructs underlying the scales, as demonstrated by inter-item correlation and factor analysis.	The reliability of the five benchmark scales, measured by Cronbach's alpha, range from .56 to .80. The validity of the benchmarks is established through factor analysis and regression models predicting student GPA and self-reported gains on four-point scales measuring academic, personal and career development.
Sources	http://coe.memphis.edu/CSHE/CCSEQ.asp (Ethington & Polizzi, 1996; Pace, 1999)	www.ccsse.org (Marti, 2004)

Table 3: Comparison of surveys of community college students' experiences, behavior and attitudes (continued)

SURVEY	Cooperative Institutional Research Program (CIRP)	AACC/ACT Faces of the Future Survey (FOF)
Focus	Focuses on students' high school experiences, expectations, goals, reasons for attending college, and students' academic experience in college, behaviors and tendencies, and community involvement.	Focuses on students' experiences in relation to their goals and expectations, including barriers faced by the student, employment background, reasons for enrollment, and the extent to which course-taking by the student has met the student's needs and expectations.
Theoretical foundation	Astin's theory of involvement, the I-E-O model (student inputs, college environment and student outputs).	Not available on ACT Web site.
Measurement	Measures self-reported college experiences, skill development during college, information about student profiles (sex, race, demographics, major), student expectations during college, attitudes and behaviors regarding leadership, self-reported academic abilities, attitudes and behaviors about volunteering. Uses a follow-up survey to assess engagement, academic achievement and interactions with peers and faculty. Sampling: Administered through convenience sampling in classrooms or other proctored settings, such as orientation.	Measures demographic information (general, employment, education) and current college experiences, including access, purpose, learning, satisfaction, expected outcome, intent and transitions. Sampling: Both credit and non-credit students.
Benchmarks/ reporting of results	*The American Freshman* is the annual national report of CIRP norms on first-time, full-time freshmen.	Analysis of national data is based on 48,763 student records from 157 community colleges from the Fall sessions of the 2000-01 and 2001-02 academic years. Participating institutions receive national results, an individual report about their student populations, and a comparison of their data and national data.
Reliability & validity	The reliability of the survey scales are in the range of .85-.95. Predictive validity draws on research published in *How College Affects Students* by Pascarella and Terenzini (1991). Concurrent validity established based on research published in *What Matters in College: Four Critical Years Revisited* by Alexander Astin (1993).	Not available on ACT Web site.
Sources	www.gseis.ucla.edu/heri/cirp.html	www.aacc.nche.edu

Table 3: Comparison of surveys of community college students' experiences, behavior and attitudes (continued)

SURVEY	ACT Student Opinion Survey (SOS)	Noel-Levitz: Student Satisfaction Inventory (SSI)
Focus	Focuses on student satisfaction with and use of various college services, including academic, admission/registration, rules/policies, facilities and satisfaction with college environment. (An alternate four-year college form is available.)	Focuses on student satisfaction with a wide range of college experiences and student perception of overall services of the college. Students report on importance to them of each college experience and level of satisfaction with service. (An alternate four-year college form is available.)
Theoretical foundation	Not available on ACT Web site. .	Principles of consumer satisfaction and organizational performance.
Measurement	Measures demographic and background items (age, race, sex, hours worked per week, educational goals, occupational plans). Measures satisfaction with college programs and services using a five-point Likert response scale. Sampling: Information provided only to colleges administering the survey.	Uses 12 scales, including academic advising, campus climate, support services, concern for the individual, instructional effectiveness, admissions and financial aid effectiveness, registration effectiveness, responsiveness to diverse populations, safety and security, service excellence, student-centeredness and academic services. Seven-point Likert response scale assesses "importance to you," and "satisfaction with" various campus services. Three scores are then provided: an importance score, a satisfaction score and a gap score. The performance gap score indicates the difference between importance and satisfaction. Composite scales can be analyzed to determine trends in importance, satisfaction and performance over the most recent five years. Sampling: Administered in randomly selected classes, stratified by class time, selected by participating colleges.
Benchmarks/ reporting of results	Reports to participating institutions provide results as institutional statistics and graphs and national norms based on data from colleges that have administered the survey. *Summary Report, Graphics Report, National Data Comparison Report* and data diskette included in institutional survey fee.	The 2004 *National Satisfaction and Priorities Report* provides benchmarks by and across institutional types from surveys administered Fall 2001 through Spring 2004, including 259,493 student respondents in 284 community colleges.
Reliability & validity	Overall reliability estimates of .92 for satisfaction with college services and programs (Section II) and .95 for satisfaction with various aspects of the college environment (Section III) are reported, which indicates high reliability. Validity: Not reported on Web site.	Cronbach's alpha is .97 for the importance scale and .98 for the satisfaction scale, which demonstrates very high reliability. Three-week test-retest reliability is .85 for importance scores and .84 for satisfaction scores, demonstrating reliability over time. Validity: Convergent validity was assessed by correlating satisfaction scores from SSI with the College Student Satisfaction questionnaire (r=.71).
Sources	www.act.org	www.noellevitz.com (*National Student Satisfaction*, 2004)

Table 3 prepared by Diane Bourque, Alicia Dowd and Randi Korn

References

2004 National student satisfaction and priorities report. (2004). Noel-Levitz, Inc.

Accountability for better results: A national imperative for higher education. (Report of the National Commission on Accountability in Higher Education)(2005). Denver, CO: State Higher Education Executive Officers.

Alford, R. R. (1998). *The craft of inquiry*. New York: Oxford University Press.

An assessment framework for the community college: Measuring student learning and achievement as a means of demonstrating institutional effectiveness. (2004). Retrieved August 30, 2004, from http://www.league.org/publication/whitepapers/0804.html.

Astin, A. W. (1993). *What matters in college: Four critical years revisited*. San Francisco: Jossey Bass.

Bailey, T. R., & Alfonso, M. (2005). *Paths to persistence: An analysis of research on program effectiveness at community colleges* (New Agenda Series Volume 6, Number 1). Indianapolis, IN: Lumina Foundation for Education.

Banks, J. A. (1998). The lives and values of researchers: Implications for educating citizens in a multicultural society. *Educational Researcher, 27*(7), 4-17.

Barak, R. J., & Kniker, C. R. (2002). Benchmarking by state higher education boards. In B. E. Bender & J. H. Schuh (Eds.), *Using benchmarking to inform practices in higher education* (Summer 2002 ed., Vol. 118). San Francisco: Jossey Bass.

Barr, R., & Tagg, J. (1995). From teaching to learning: A new paradigm for undergraduate education. *Change, December*.

Bensimon, E. M. (2004). The diversity scorecard: A learning approach to institutional change. *Change, January/February*, 45-52.

Bensimon, E. M., Polkinghorne, D. E., Bauman, G. L., & Vallejo, E. (2004). Doing research that makes a difference. *Journal of Higher Education, 75*(1), 104-126.

Boggs, G. R. (2004, November/December). Community Colleges in a Perfect Storm. *Change*, 7-11.

Bollag, B. (2004, July 16). Opening the door on accreditation. *Chronicle of Higher Education*, p. 22.

Borden, V. M. H., & Zak Owens, J. L. (2001). *Measuring quality: Choosing among surveys and other assessments of college quality*. Washington, D.C.: American Council on Education, Association for Institutional Research.

Burd, S. (2004, April 2). Graduation rates called a poor measure of colleges. *Chronicle of Higher Education*, p. A1.

Burke, J. C., & Associates. (2002). *Funding public colleges and universities for performance: Popularity, problems, and prospects*. Albany: Rockefeller Institute Press.

Burke, J. C., & Minassians, H. (2003). *Performance reporting: "Real" accountability or accountability "lite"* (Seventh Annual Survey). Albany: Nelson A. Rockefeller Institute of Government, State University of New York.

Chickering, A., & Gamson, Z. (1987). *Seven principles for good practice in undergraduate education*. Retrieved March 18, 2005, from www.aahebulletin.com/public/archive/sevenprinciples1987.asp

Cohen, D. K., Raudenbush, S. W., & Ball, D. L. (2003). Resources, instruction, and research. *Educational Evaluation and Policy Analysis, 25*(2), 119-142.

Creating a culture of inquiry. (NERCHE Brief)(2005). Boston, MA.: New England Resource Center for Higher Education.

Doerfel, M. L., & Ruben, B. D. (2002). Developing more adaptive, innovative, and interactive organizations. In B. E. Bender & J. H. Schuh (Eds.), *Using benchmarking to inform practices in higher education* (Summer 2002 ed., Vol. 118). San Francisco: Jossey Bass.

Dowd, A. C., & Grant, J. L. (forthcoming-a). Equity and efficiency of community college financing: The role of local financing. *Review of Higher Education*.

Dowd, A. C., & Grant, J. L. (forthcoming-b). Equity effects of entrepreneurial community college revenues. *Community College Journal of Research and Practice*.

Dowd, A. C., & Korn, R. (2005). *Students as cultural workers and the measurement of cultural effort.* Paper presented at the Council for the Study of Community Colleges, Boston, MA.

Dowd, A. C., & Tong, V. (2004, October 4). *Developing peer comparison and benchmarking systems for institutional effectiveness*. Paper presented at the Community College Student Success Project Northeastern Regional Symposium, Roxbury Community College, Boston, MA.

Engagement by design: 2004 findings. (2004). Austin, TX: Community College Survey of Student Engagement, Community College Leadership Program, University of Texas at Austin.

Esposito, T., & Dowd, A. C. (2004, October 4). *Measuring what matters: An expanded view of learning*. Paper presented at the Northeastern Regional Symposium: Community College Student Success Project, Roxbury Community College, Boston, MA.

Ethington, C. A., Guthrie, A. M., & Lehman, P. W. (1999). *CCSEQ: Test manual and comparative data* (3rd ed.). Memphis, TN: University of Memphis.

Ethington, C. A., & Polizzi, T. B. (1996). An assessment of the construct validity of the CCSEQ quality of effort scales. *Research in Higher Education, 37*(6), 711-731.

Evelyn, J. (2005). *Community colleges should rely more on institutional research, conference panelists say*. Retrieved March 8, 2005, from http://chronicle.com/.

Ewell, P. T. (1991). To capture the ineffable: New forms of assessment in higher education. *Review of Research in Education, 17*, 75-125.

Ewell, P. T. (1997). Organizing for learning. *Change, November/December*.

Fischer, K. (2005). *Commission on college accountability calls for a broader approach, using more data on students*. Retrieved March 10, 2005, from http://chronicle.com/.

Fleming, B. (2004, July 14). *House Republicans defend proposals for holding colleges more accountable*. Retrieved July 14, 2004, from http://chronicle.com/daily/2004/07/2004071401n.htm.

González, K. P. (2001). Inquiry as a process of learning about the other and the self. *Qualitative Studies in Education, 14*(4), 543-562.

Hurley, R. G. (2002). Identification and assessment of community college peer institution selection systems. *Community College Review, 29*(4), 1-27.

Identifying and implementing educational practices supported by rigorous evidence: A user friendly guide. Retrieved November 1, 2004, from http://www.ed.gov/print/rschstat/research/pubs/hrigorousevid/guide/html.

Koestenbaum, P., & Block, P. (2001). *Freedom and accountability at work: Applying philosophic insight to the real world*. San Francisco: Jossey-Bass/Pfeiffer.

Marti, C. N. (2004). *Overview of the CCSSE instrument and psychometric properties*. Retrieved September 14, 2004, from http://www.ccsse.org/aboutsurvey/psychometrics.pdf.

McClenney, K. M. (2003). The learning-centered institution: Key characteristics. *Inquiry & Action, Spring*, 5-6.

McClenney, K. M. (2004). Keeping America's promise: Challenges for community colleges. In K. Boswell & C. Wilson (Eds.), *Keeping America's promise: A report on the future of the community college* (pp. 7-20). Denver: Education Commission of the States and the League for Innovation in the Community College.

McCormick, A. C. (Ed.). (2003). *Classification systems for two-year colleges* (Vol. Number 122, Summer). San Francisco: Jossey-Bass.

Moore, W. S. (2002). Accountability is more than "accounting": Promoting and sustaining institutional assessment-as-learning. *Journal of Applied Research in the Community College, 9*(2), 89-96.

Nora, A. (2001-2002). The depiction of significant others in Tinto's "rites of passage": A reconceptualization of the influence of family and community in the persistence process. *Journal of College Student Retention:, 3*(1), 41-56.

O'Banion, T. (1997). *A learning college for the 21st Century*. Phoenix: Oryx Press.

O'Banion, T. (1999). *Launching a learning-centered college*. Mission Viejo, CA: League for Innovation in the Community College.

Ouimet, J. A., Bunnage, J. C., Carini, R. M., Kuh, G. D., & Kennedy, J. (2004). Using focus groups, expert advice, and cognitive interviews to establish the validity of a college student survey. *Research in Higher Education, 45*(3), 233-250.

Pace, C. R. (1999). The development and framework of the CCSEQ. In C. A. Ethington, A. M. Guthrie & P. W. Lehman (Eds.), *CCSEQ: Test manual and comparative data* (3rd ed.). Memphis, TN: University of Memphis.

Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students: Findings and insights from twenty years of research*. San Francisco: Jossey-Bass Publishers.

Rendón, L. I., Jalomo, R. E., & Nora, A. (2000). Theoretical considerations in the study of minority student retention in higher education. In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 127-156). Nashville: Vanderbilt University Press.

Scheuren, F. (2004). *What is a survey?* Retrieved December 21, 2004, from http://www.whatisasurvey.info.

Scientifically-based research. Retrieved March 15, 2004, from http://www.ecs.org/html/educationIssues/Research/primer/researchsays.asp.

Strout, E. (2004, July 13). *Colleges should become more accountable, Smith's leader says, or face the legislative consequences*. Retrieved July 13, 2004, from http://chronicle.com/daily/2004/07/20040713n.htm.

Suskie, L. A. (1996). *Questionnaire survey research: What works* (2nd ed.). Tallahassee, FL: Association for Institutional Research.

Tagg, J. (2003). *The learning paradigm college*: Anker Press.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition* (Second ed.). Chicago: University of Chicago Press.

Walleri, R. D. (2003). The role of institutional research in the comprehensive community college. *Journal of Applied Research in the Community College*.

Weeks, S. F., Pucket, D., & Daron, R. (2000). Developing peer groups for the Oregon university system: From politics to analysis (and back). *Research in Higher Education, 41*(1), 1-20.

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