REQUIRED READING


STUDY QUESTIONS

*Essay Questions*

1. What processes are crucial to a system? Identify the authorities who make decisions on strategic improvements at the various levels within a system.

2. Discuss the concepts of a systems approach to sustaining a culture of continuous improvement in institutions of higher education.

3. While specifying performance indicators and methods for monitoring and assessing outcomes at UW-Stout, Furst-Bowe (2011) states that the systems thinking perspective is critical for formulating comprehensive strategies that consider all relevant factors involved in improving a specific performance indicator. What models of organizational functioning can higher education leaders employ to ensure that performance indicators are consistent with institutional mission?

4. Identify and discuss four components necessary for a successful approach to systems thinking as they pertained to the University of Wisconsin-Stout.
Dramatically shifting demographics, coupled with increased student expectations, continuous technological advances, and state and federal demands for increased completion rates are driving the need for significant improvement in higher education. It is extremely difficult to meet these challenges given the current environment of declining financial resources, and it is clear that institutions must reconsider traditional methods of operation and implement systematic methods for improving quality, efficiency, and effectiveness to remain viable in the global economy. Change must occur in all aspects of higher education, including academic programs, student support services, as well as administrative areas. Leaders must recognize that making changes in one aspect of an institution will have impacts on many other areas of the institution. For example, a decision to increase the international student population will impact several areas of the campus including English language programs, student housing, food service, as well as faculty and staff training and development programs. The University of Wisconsin-Stout (UW-Stout) has been involved in quality improvement for more than a decade, and senior leaders have realized that systems thinking is a major key to managing change and improving performance.

Systems thinking is a cohesive approach to management that views all key processes as parts of an overall system, rather than in isolation or as segments. Systems thinking is based on the idea that all key processes in an organization are interrelated. Understanding these relationships is critical to obtaining desired results, making targeted improvements, and achieving organizational effectiveness. When an organization is governed by systems thinking, work progresses at a faster, more efficient pace. Leaders with a systems-management approach guide synchronous actions across the entire organization, assuring alignment and integration of all units to maximize resources and productivity.

In a college or university setting, a systems perspective is essential for engaging the campus in setting goals, establishing priorities, allocating resources, identifying key performance indicators, and driving improvements. For example, if an institution sets a goal of increasing enrollment, all key processes and units, including marketing, recruitment, admissions, and financial aid must be aligned to achieve that goal. Resources must be deployed in these areas, as well as to the academic and student services units, to ensure adequate capacity to serve the increased number of students, both in and out of the classroom.

Potential Challenges
Implementing a systems perspective at a college or university, however, can be challenged by organizational structures, shared governance, faculty autonomy, and continued budget issues. Most higher education institutions continue to be organized in a traditional hierarchy, with several layers of management and numerous divisions and departments. The persistence of these functional silos, each with its own policies and processes, often leads to narrow vision, poor communication, and a lack of integration and alignment on campus-wide initiatives.

Although governance structures vary widely among higher education institutions, shared governance models that give faculty, staff, and students a voice in campus decision making are commonplace. Often, these internal stakeholder groups have very different motivations and priorities, making it difficult for institutions to move forward systematically with new initiatives or improvements to existing processes. In the United States, higher education is based on a tradition of academic freedom that allows faculty considerable autonomy in their teaching, research, and scholarly activities. This autonomy, however, can lead to pockets of faculty resistance and a lack of consistency when an institution is attempting to implement systematic methods for assessing student learning, using technology, or standardizing course evaluations across academic departments.

On a larger scale, budget limitations or funding formulas are often barriers to systems thinking and can dramatically affect how an institution establishes its priorities and allocates its resources. Frequently, budget cuts at public institutions include across-the-board reductions, employee furloughs,
or hiring freezes on vacant positions. Although these are some of the more manageable ways to deal with budget reductions, they are clearly not the most strategic and reflect a lack of systems thinking.

When across-the-board reductions are implemented, as opposed to strategic reallocations, institutions are unable to move forward with new initiatives. Overstaffed and understaffed departments and programs are treated equally, as are high-performing and low-performing employees. Priorities and resource alignment are compromised for the sake of convenience or fairness. These across-the-board actions conflict directly with systems thinking, which is based on strategic alignment, process management, and resource prioritization to drive continuous improvement.

Baldrige and Systems Improvement

Given all of these barriers, it is possible to develop and sustain a systems perspective and a culture of continuous and breakthrough improvement in higher education institutions. There are several models and frameworks that can assist campus leaders in developing this perspective and using systems thinking to benefit their institutions. The Baldrige Education Criteria for Performance Excellence provides a management model with a systems perspective for managing higher education institutions and their key processes to achieve results. The criteria also serve as the basis for the Malcolm Baldrige National Quality Award. First published in 1999, the education criteria have been used by postsecondary institutions across the United States for more than a decade. Most states and numerous other countries have established similar criteria and award programs based on the Baldrige criteria.

The education criteria are built on a set of interrelated core values and concepts, including visionary leadership, learning-centered education, and systems perspective. Within the Baldrige framework, a systems perspective is defined as the senior leadership focus on strategic directions and students. It means the senior leadership team monitors, responds to, and manages performance based on results, both short term and strategic. A systems perspective also includes using information and organizational knowledge to develop core strategies while linking these strategies with key processes and resources to improve both student and institutional performance.

Baldrige Criteria in Use at UW-Stout

UW-Stout began using the Baldrige criteria in 1999. In 2001, the school became the first higher education institution to receive the Malcolm Baldrige National Quality Award. One of 13 campuses that make up the University of Wisconsin System, UW-Stout enrolls approximately 8,800 in career focused undergraduate and graduate programs. The university continues to use the Baldrige criteria and was cited by the Academic Quality Improvement Program as a "national and international role model for quality in higher education." Over the past decade, UW-Stout has demonstrated a systems perspective to performance excellence and has developed a culture of continuous improvement that has been tested by changing student demographics, declining state appropriations, and continuing turnover in key leadership positions. UW-Stout's management approach has sustained its key performance results through changes in economic and market conditions. These performance goals are calibrated by best-practice benchmarks and competitive comparisons.

Although there are numerous components to UW-Stout's quality management system, four components have been critical to the system and have been in place and refined continuously for more than a decade:

- An inclusive leadership system.
- A clearly defined set of student and stakeholder groups and understanding of their key requirements.
- A participatory planning process.
- An end-to-end system for measuring institutional performance.

UW-Stout's inclusive leadership system was put into place in the mid-1990s, with goals of improving communication, trust, and decision making across the campus. The senior leadership team and its responsibilities were greatly expanded; the current senior leadership team has approximately 20 individuals, including administrators and representatives from faculty, staff, and student governance groups. This group meets every two weeks to review performance data, discuss issues, establish priorities, and serve as the key decision-making body for the campus. Members are responsible for communicating issues and actions with their representative groups. Members of the senior leadership team also serve on the strategic planning group for the campus. UW-Stout has implemented a comprehensive and robust strategic planning process beginning with a summer retreat attended by the senior leadership team and internal and external stakeholders, including alumni, community leaders, legislators, and employers. At this retreat, UW-Stout's
mission, vision, and values are reviewed, performance is analyzed, emerging issues are discussed, and strategic priorities for the campus are drafted. Early in the fall, these draft priorities are shared with faculty, staff, and students at a series of listening sessions and through electronic communication.

Once the priorities have been finalized, action plans are created for each priority. Each action plan includes the responsible individuals or units, high-level steps, resources needed, a timeline and key performance indicators. Progress on action plans is monitored closely by the senior leadership team and there is a high level of accountability. Since this process was implemented, more than 60 action plans have been completed in areas such as globalization, e-scholar (laptop) deployment, applied research, and online program development. Action plans for university priorities are complemented by other university plans, including the academic plan, the integrated marketing plan, the affirmative action plan, and the IT plan.

Key Performance Indicators

Over the past decade, UW-Stout has refined its key performance indicators by focusing primarily on those that measure student engagement, progress, and success from the time students enter the university to after they have graduated and are employed in professional positions. Key student performance indicators include rates of applications, enrollments, retention, transfers, experiential learning participation, graduation, job placement, alumni satisfaction, and employer satisfaction with UW-Stout graduates.

These indicators were established through a comprehensive analysis of student and stakeholder requirements. They provide UW-Stout with a systematic view of the institution as students can be tracked at each stage of their college careers and beyond. Data from a number of sources, including surveys, are used to provide information for each performance indicator. These sources include the National Survey of Student Engagement or the ACT Alumni Outcomes Survey, and behavioral data, such as the amount of time students spend in campus laboratories or the percentage of students who participate in off-campus experiential learning programs. To assist in analysis, data are segmented according to student cohort, gender, race, or major program whenever appropriate. These types of analyses often help pinpoint specific problems in a program, process, or system.

Over time, UW-Stout has refined its use of comparative data and compares its performance to other UW system institutions regularly, as well as with U.S. and international institutions that have similar missions and programs. This is done to provide context for setting goals and analyzing institutional performance. When reviewing comparative data and stretch goals, the systems thinking perspective is critical to ensure that comprehensive strategies are formulated that consider all relevant factors involved in improving a specific performance indicator, such as student retention or graduation rates.

By using the Baldrige criteria and a systems-thinking perspective, UW-Stout has been able to demonstrate long-term progress in priority areas, such as increasing student enrollment, closing the achievement gap between majority and minority students, and increasing the number of students who participate in experiential learning programs. The campus has been able to achieve and maintain best-in-class status in areas that are key to its mission, including laboratory experiences, job placement rates, and employer satisfaction with graduates.

Systems thinking is based on the concept that all key processes in an organization are interrelated, and understanding these relationships is critical to obtaining desired results. The Baldrige criteria also require that senior leaders embrace systems thinking and promote that focus throughout the organization at all levels. The ultimate value in systems thinking in higher education is that it transcends institutional silos and provides campuses, such as UW-Stout, the ability to achieve institutional goals and sustain consistent performance improvement over time.

Editor’s note: This article is an update of Furst-Bowe’s June 2009 ASQ Higher Education Brief article, “Sustaining Performance Excellence in Higher Education.”

Julie Furst-Bowe

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A College Education with Purpose
Systems Thinking and Thinking Systems

Dr. Scott Koerwer: President of Newberry College

In 1993, my late professor, advisor, and mentor, Dr. Russell Ackoff, published in Systems Dynamics Review (Summer–Fall 1994) a monumentally important article entitled “Systems Thinking and Thinking Systems.” This article was of landmark importance because it presented a basic explanation of systems thinking and simplified the application of these definitions to the modern enterprise.

Ackoff wrote the article in a tone that closely resembled many of our personal conversations where he would lead me through the definitions of and differentiations between “problems” and “messes.” Inevitably, Ackoff and I would end up discussing the purposes of higher education—what role education plays in society and what impact we hoped to have on our students.

Ackoff taught me three types of systems:
- Mechanical. An automobile is a mechanical system. While observably complex, automobiles have no purpose of their own, no innate design; rather, they are solely dependent upon an agent, the driver.
- Organismic. An organism is a system that has at least one purpose or goal of its own. For instance, survival may be the sole purpose of a simple fungus or microorganism.
- Social. Social systems have purposes of their own, but are “open” in that their participants have their own purposes and they may be situated within other social systems. A college or university is a social system, with essential participants (such as students, faculty, coaches, staff, alumni, and trustees) who have purposes of their own and yet are parts of larger systems (such as, a community, the nation) that also have purposes of their own.

Are the actions we take at Newberry College, in and outside our classrooms, creating the necessary and ideal educational experiences that lead our students to an awareness of their roles in and contributions to the larger educational and civic ecosystem?”
All too often, a college education is not thought of as a complex, interactive enterprise (or social system) that has the privileges and responsibilities of preparing future citizens for successful and significant lives. Rather, today, a college experience may be confused with a routine, mechanistic experience of preparing for a job, earning an income, or gaining access to goods or services. The assumption—mistakenly—is that the better one performs the routine or masters a discrete process, the greater access he or she has to more exclusive goods or services.

This is not a college education nor is it an education with a purpose of significance.

As a result of our strategic planning at Newberry College, our students are beginning to ask the important questions about how their courses fit together, how their curriculum prepares them for the responsibilities of citizenship, and how their learning experience will prepare them to navigate a future that neither we, nor they, can predict. They are demonstrating agency in their educational social or ecosystem. This level of participation among college students cannot be assumed; rather, it must be elicited, discussed, debated, and reinforced so that the skills of critical thinking are applied to our daily decisions.

The College as a social system is an advanced and complex existence, which is often advertised or assumed, but rarely implemented with success and significance. It is for all intents and purposes an idealized educational state of operation. The administration and management of complex, interdependent, social systems require a higher state of individual, group (or team), and communal awareness. Ackoff regularly challenged me to identify an ideally designed and operated enterprise. His challenge inevitably led to a pause on my part of the conversation.

We are all members of complex social systems. Consider for a minute the last time a family member, a friend, or a professional colleague took action on something and it had an “unforeseen” ramification for you. Conversely, think about the last time a family member, a friend, or a professional colleague did not take action on something and it had an “unforeseen” ramification for you. Unforeseen ramifications are evidence that we are all participants in other systems—some that we are conscious of and may be fully involved, others that we are not.

The College as an educational social system requires that the members of the entire learning community—students, faculty, professional staff, trustees, and other participating agents—interact positively with the knowledge of and respect for the other constituents—and mindful of the larger system(s) in which they are involved. For instance, Newberry College is part of the social system of the city of Newberry, which is part of the social system of Newberry County, which is part of the social system of South Carolina. You understand the point, a critically important one because it leads to an essential question: Are the actions we take at Newberry College, in and outside our classrooms, creating the necessary and ideal educational experiences that lead our students to an awareness of their roles in and contributions to the larger educational and civic ecosystem? Do they understand how and why their education should prepare them to fully participate as citizens of Newberry—and beyond—when they complete their degrees?

This is the challenge for Newberry College and, hence, the foundation of strategic planning.
The Newberry College strategic planning process compels us to envision more clearly the critical and important roles that we play in the business and economic development of Newberry. In turn, we understand better how the educational ecosystem of a liberal arts college and the town-and-gown relationships mutually develop—all the while offering our students essential insights into their roles and responsibilities in the educational, organizational, and civic complex systems they will need to negotiate and manage.

Accordingly, our strategic planning program at Newberry College has adopted the controlling metaphor of the educational ecosystem. The strategic goal of the educational program that is emerging from our planning is that each student will participate in a system of increasingly self-guided and independent learning experiences across five major dimensions: 1) personal, character, and spiritual formation; 2) liberal and empathetic learning; 3) professional knowledge and expertise; 4) experiential learning and practice; and 5) civic and community participation. The College’s educational ecosystem will include various, interconnected webs of learning, experience, and practice—starting with a revitalized campus, engaging the larger social systems of the City of Newberry and South Carolina, and expanding into other urban and global “webs” of engagement. Through an intentional developmental process of knowledge and praxis self-appropriation, each student will become increasingly independent in their abilities to manage complex learning and social systems, at the same time they grow into self-directed (or ontological) leaders.

Now, the difference between systems and “messes.” One of the most derailing misconceptions of leadership teams involved in strategic planning is that problems are objects of direct experience—that we directly experience a marketing or recruitment or financial problem. Ackoff would teach that problems are better defined as abstractions (or concepts) extracted from experience by analysis. He used to knock his knuckles on a table and say, “Tables are experienced, atoms are not.” Neither leadership teams (nor students) are confronted by separate problems, but with situations that consist of complex, interacting systems of strongly interacting problems. Ackoff called this a “mess,” when these complex interactions were left unanalyzed and misunderstood.

Asking the difficult questions that help illuminate and deconstruct messes is not easy and can be perilous. We know this at Newberry College yet we persist. All of us at the College are committed to the task in front of us—to create an “educational ecosystem” that provides every single student that passes through our hallways the opportunity to understand, to engage, and to participate in solving our critical problems—whether right here on Main Street or halfway around the world. There are many messes that we will address, but positive strategic change inevitably results when we take responsibility for our messes.

The higher education industry is under siege by a complacency to interact with the challenges of the global marketplace and, in some cases, an unwillingness to make hard choices for fear of alienating competing constituencies. A strategic planning process, grounded in the market realities we face, just like the classes that

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1 P184 System Dynamics Review Vol. 10 nos 2-3 (Summer-Fall 1994) 175-188 “Systems thinking and thinking systems” All original content in this article, unless otherwise noted, is drawn from Dr. Russell Ackoff via this article or other sources. Some sentences are borrowed directly from the work.
our students take, will touch every part of an educational enterprise, every constituent and every part of our students’ lives. Everything will change with a great strategic plan; difficult choices will be made; and systems will be developed and integrated. This challenging process will evolve the nature of our curriculum, our co- and extra-curricular activities, our physical assets and footprint, our town-gown interactions, and, ideally, the very nature of how we work with each other—our critical constituents—students, alumni, staff, faculty, partners, and citizens of Newberry, South Carolina, the nation, and the world. Newberry College, through its reality-based education, will address ever-changing market dynamics and develop participative, interactive citizens capable of living in a world that we cannot fully predict or anticipate.

When we bump into problems together at the College, I like to tell our students that having to work through messes is a lot like life. Newberry College is your final lab experiment. Use this time in college to start working on some really big issues, some big messes. In years to come, I hope that every Newberry College student will be prepared to address and understand the interacting problems, or the messes, they will encounter as citizens with the knowledge and confidence that they can persist and work through the mess—because Newberry College made all the difference.

Dr. V. Scott Koerwer is an entrepreneur in the higher education industry with more than 20 years of experience, three entrepreneurial startups, and numerous program development initiatives around the globe. He currently serves as the 21st President of Newberry College. He has a bachelor’s degree from Muhlenberg College; he earned a master’s degree in government and political science from Lehigh University, and a doctorate degree from the University of Pennsylvania. Dr. Koerwer is an alumnus from the Kellogg School of Management’s Advanced Executive Program and also earned a two-year certificate in organizational development and consulting from the National Training Labs. Dr. Koerwer has served in dean and director roles at business schools including the Darla Moore School of Business at the University of South Carolina; the Robert H. Smith School of Business at the University of Maryland, and the Wharton School at the University of Pennsylvania. Dr. Koerwer has been a consultant to numerous companies, entrepreneurial initiatives, and educational enterprises around the world. Current and past clients include world-class organizations such as Johnson and Johnson, Merck, Dupont, IBM, Merrill Lynch, Black and Decker, the World Bank, Lockheed Martin, Northrop Grumman, SAIC, Samsung, Toyota Motor Corporation, McCormick, Nextel, Otis Elevator, and not-for-profit organizations including the Securities Industry Association, the Association of Investment Management Sales Executives, and the NASD. He has engaged in educational programs and/or business activities in countries including: Iraq, Saudi Arabia, China, India, Japan, Thailand, Tunisia, Egypt, Singapore, England, Mexico, and South Korea.
Basic principles of systems thinking as applied to management and leadership

- Systems thinking is a management discipline that concerns an understanding of a system by examining the linkages and interactions between the components that comprise the entirety of that defined system.

- The whole system is a systems thinking view of the complete organization in relation to its environment. It provides a means of understanding, analyzing and talking about the design and construction of the organization as an integrated, complex composition of many interconnected systems (human and non-human) that need to work together for the whole to function successfully.

- Whole systems are composed of systems, the basic unit, which comprise several entities (e.g. policies, processes, practices and people) and may be broken down into further sub-systems.

- Systems may be thought about as having clear external boundaries (closed) or having links with their environment (open). An open systems perspective is the more common and realistic.

- The boundaries of a whole system may be chosen and defined at a level suitable for the particular purpose under consideration; e.g. the education system or a complete school system.

- Similarly, systems can be chosen and defined at different levels and can operate alongside each other as well as hierarchically; e.g. the finance system, the decision-making system, the accountability system.

- An organization as an entity can suffer systemic failure. This occurs in the whole system or high-level system where there is a failure between and within the system elements that need to work together for overall success.

- Factors in systemic failure may include confused goals, weak system-wide understanding, flawed design, individual incentives that encourage loyalty to sub-ordinate (rather than super-ordinate) goals, inadequate feedback, poor cooperation, lack of accountability, etc.

- Whole system success requires a performance management system that is pitched above the level of individual systems and their functional leadership. Features may include group or team-level goal-setting, development, incentives, communication, reviews, rewards,
accountability. The aim is to focus on what binds individuals together and what binds systems together rather than functional silo performance.

- Whole system failure may co-exist alongside functional success. The leadership of silos may individually be successful but not be sufficiently integrated into the whole system owing to a shortcoming of systems design, management or understanding.

- A whole system can succeed only through managers collaborating in and across a number of functional systems. The whole system can fail only if leadership at the level of the whole system fails, and where several senior managers are involved. Hence, such failure may be labeled a systemic failure of leadership.

- In cases of systemic failure, individual executives who operate at a lower sub-system level may be free of responsibility and blame. They may argue (correctly) that it was the wider system that failed. They may claim that particular systems that integrate with their own work let them down. However, responsibility and accountability for the successful design and running of the (integrated) ‘whole system’ should rest somewhere.

- Understanding and anticipating how the whole system is intended to work, actually works, and how it may buckle under pressure, can practically elude and defeat most executives. To avoid censure for this tough challenge, they sometimes seek recourse to the often hollow mantra “lessons will be/have been learned”. They also try to divert attention and reassure investors by referring to a single bad apple (e.g. a ‘rogue trader’), behind which usually lurks a systemic failure.

- The leadership challenge is accentuated by the realization that for every legitimate, official or consciously designed system (which is intended to be and is supposedly rational) there is a shadow system. The shadow system is where all the non-rational issues reside; e.g. politics, trust, hopes, ambitions, greed, favours, power struggles, etc.

- The system can confuse, overpower, block, and fail leadership. But leadership can fail the system. A major failure of leadership within, across or down an organization is referred to as “systemic.”

Extract from Chapter 12 “Leadership and Systems” in *The Search for Leadership: An Organizational Perspective*, Triarchy Press