Managing Change in Dental Education: Is There a Method to the Madness?

Geralyn Crain, D.D.S.

Abstract: The literature surrounding dental education in the United States is replete with calls for change in the way that dental students are being educated. These calls are being echoed with curriculum models and examples of best practices, but what is missing is specific information about how to implement a desired change—that is, discussion of the change process itself. Knowledge of the organizational change process in other settings, particularly in higher education and professional education, may be of interest to academic program managers in dental schools who are planning or are engaged in change. Historical and theoretical perspectives on organizations and change are presented in this article as groundwork for more detailed discussion about management of change. Seventeen research-based principles of change in higher education and factors in dental education that influence change processes and outcomes are presented and synthesized into guidelines for a hypothetical model for change in a dental school environment. Issues pertinent to the practical management of change are presented, including reframing organizational complexity, change leadership, values/competence/commitment, and organizational learning. An appreciation for change as an ongoing and manageable process will enhance a dental school’s viability in a rapidly changing world and ultimately benefit dental graduates and the communities they serve.

Dr. Crain is Clinical and Research Assistant Professor, School of Dentistry, University of Missouri–Kansas City (UMKC) and an Interdisciplinary Ph.D. Candidate in the School of Dentistry’s Department of Oral Biology and the UMKC Henry W. Bloch School of Business and Public Administration’s Department of Public Affairs. Direct correspondence and requests for reprints to her at University of Missouri–Kansas City, School of Dentistry, Department of Oral Biology, Room 3156, 650 East 25th Street, Kansas City, MO 64108; 816-235-5419 phone; 816-235-5524 fax; gdkmq3@umkc.edu.

This article is one in a series of invited contributions by members of the dental education community that have been commissioned by the ADEA Commission on Change and Innovation in Dental Education (CCI) to address the environment surrounding dental education and affecting the need for, or process of, curricular change. This article was written at the request of the ADEA CCI but does not necessarily reflect the views of ADEA, the ADEA CCI, or individual members of the CCI. The perspectives communicated here are those of the author.

Key words: organizational change, change management, dental education, curriculum reform

“The art of progress is to preserve order amid change and to preserve change amid order.”
—Alfred North Whitehead

To meet the changing needs of society, there have been many calls for change in the way that dental students are educated. International and national attention has focused on the need for curriculum reform in health care education, including dental education, in order to address existing inadequacies, such as an increasing focus on high tech procedures to the detriment of a more humanistic, holistic, and evidence-based approach to health care. If an individual dental school chooses to engage in change, regardless of the magnitude, in addition to focusing on what to change, focusing on managing the process—how to change—will enhance success in achieving change that is comprehensive and sustainable.

The current dental education literature contains multiple presentations of the rationale for curricular reform. Recommendations for curriculum content and educational strategies have been published as curriculum models, pedagogical techniques, and examples of best practices. But despite the articulation of compelling rationales and substantive recommendations for educational reform, there are relatively few studies of the change process itself in dental education. Kassebaum et al. conducted a survey that resulted in a cross-sectional view of predoctoral curricula and curriculum evaluation strategies, as well as recently implemented and planned changes in North American dental schools. Although that study did not address the change process itself, a method for managing curriculum revision was described that involved an ideal curriculum committee comprised of faculty who could be counted upon to take a “wide view” and focus on the best interests
of the entire school versus parochially defending departmental/disciplinary turf. With regard to the curriculum change process itself, Kassebaum et al. summarized the responses to survey questions about process as “the tortuous and emotionally laden path to educational reform.” Currently, a targeted inquiry into dental schools that have recently planned or implemented changes, with emphasis on process issues during the initiation phase of the planning, is under development (a proposed project of Dr. Karen Novak, 2008 ADEA/William J. Gies Foundation Education Fellow). A transformational change in the curriculum at a private Midwest school of dental medicine, with particular emphasis on the architecture of the change process, has recently been reported, and a theoretical analysis of the organizational change process in one public U.S. dental school that has recently undergone significant curriculum and clinic changes is also under way (“Qualitative Analysis of the Organization Change Process in Dental Education: A Case Study,” my dissertation project). Two articles in the December 2007 issue of the Journal of Dental Education highlighted the importance of faculty development to successful change and emphasized issues germane to the process of implementing curriculum reforms. Finally, Dharamsi et al. studied the curricular change process at the University of British Columbia School of Dentistry by exploring its social constructs. These examples demonstrate that whereas many schools are involved with changes, relatively few authors have chosen to bring focus to particular aspects of the change process itself or have published their experiences in the dental education literature.

In contrast, beyond dental education, there is a great deal written about the change process in organizations in general and in educational institutions in particular, especially in higher education. These and other studies investigated the organizational and educational reform processes in various settings and reached the conclusion that change initiatives are as likely to be derailed over disagreements about process as they are about substance. Further, it was found that when individuals paid attention to and were personally comfortable with the process/procedural aspects of the reform effort, greater success resulted.

This article was invited by the American Dental Education Association (ADEA) Commission on Change and Innovation in Dental Education (CCI) in order to present information about the organizational change process with a focus on factors that may be unique to the academic environment. Utilizing established knowledge about change and innovation in other educational and non-educational organizations as a framework, the purpose of this article is to raise awareness of these processes and, in particular, to espouse the perspective that change and innovation are processes that can and should be managed systematically to ensure success. It should be acknowledged that all dental schools, as with all organizations, experience ongoing changes of various magnitudes, sometimes as a consequence of calculated, purposeful planning to achieve targeted modifications and sometimes as a result of reactive and spontaneous response to unforeseen events and undesired outcomes (“firefighting”). Many dental schools have probably experienced impressive change and innovation in both content (what was changed) and process (how the change was accomplished) without reporting these outcomes and strategies in the literature. Still, a cursory review of salient features that emerge from the organizational change literature, particularly in that of higher education and in professional education, may be of interest to those who are in the midst of or in the planning or reflective stages of change.

The type of change being called for in dental education (change that cultivates critical thinking, evidence-based practice, and lifelong learning, for example) is deemed “transformational” and is to be distinguished from 1) “unplanned” change that arises in response to some unforeseen situation and 2) “superficial” change that reflects a new way of doing the same old thing. Rather, transformational change is systemic (deeper), is pervasive (more widespread), and may involve the altering of the beliefs and understandings held by individuals within the organization. The American Council on Education (ACE) conducted the Project on Leadership and Institutional Transformation, which included a six-year study on change in higher education involving twenty-six universities. (A synopsis of the report is posted on the ADEA CCI website at www.adea.org/adeacci/Documents/SynopsisACE.pdf.) The authors of this landmark study defined the characteristics of transformational change in the following ways: 1) it alters the culture of the institution by changing select underlying assumptions and institutional behaviors, processes, and products; 2) it is deep and pervasive, affecting the whole institution; 3) it is intentional; and 4) it occurs over time. These authors defined “successful” change not only in terms of outcomes, but as a modification that is sustained without reversion to a previous state even though the details of reform may indeed be modified over a period of time as the
new way of doing business is merged into the culture of the institution.

The “process” of change refers to how and why a change is initiated, implemented, evaluated, and sustained. “Innovation” in organizations refers to the initiation and adoption of new ideas and practices and is often considered concomitant with change. Although change and innovation are separate processes, unless otherwise noted, innovation will be implied within the organizational change process in this article.

To apply what is known about organizational change to dental education, it is useful to begin with a perspective that views organizations as entities that exist within unique external and internal environments. Although this perspective is seemingly intuitive, this was not always the case as will be described in the next section. A brief historical overview of formal thought about organizations is presented to provide a foundation for further discussion of factors that influence organizational change. Knowledge about the broader organizational framework, in addition to a focus on individual member behavior, increases the likelihood that successful change will occur.

Organizations: A Historical Perspective

The definition of an organization today differs significantly from that of the past. Early models of organization were based on the localization of power over subordinates, such as in military settings, where the notion of “control” was inseparable from that of “organization.” By the nineteenth century, increased growth and complexity in this country gave rise to more political means to organize and control. In the late 1880s, Woodrow Wilson, who was a professor of political science at the time, was one of the first to focus on the organization as an entity and to propose theories about such issues as personnel and management. What emerged over the next five decades was a fixation on the strict management of people and organizations in systematic and predictable ways. By the 1930s, a countermovement to this obsession with bureaucracy and efficiency evolved. Perhaps the most significant contribution during this time came from Nobel laureate Herbert Simon, who introduced the concept of “bounded rationality” to call into question the strict rational decision making found in scientific management thought. Simon and others argued that there is not a one-size-fits-all model of administration and that attention needs to be paid to the unique and complex environments influencing each organization and to the behaviors of the individuals who constitute it.

In the 1940s, sociologists such as Kurt Lewin began taking an interest in research on organizations as social entities. Lewin, a social scientist at MIT, is considered to have pioneered the thinking about organizational change. His model of “unfreezing—movement—and refreezing” individual behavior that collectively results in organizational change is considered foundational. Among Lewin’s other fundamental contributions is the now obvious notion that motivation for change must first occur in order for a change effort to be successful. He also championed action research, a type of reflection performed by the participants of an organization themselves, as a meaningful way to manage a change process.

After World War II, the traditional management school was firmly replaced by the human relations school with a focus on topics that included leadership, roles, values, goals, motivation, collaboration, and shared decision making. The decades since have cultivated a deeper construct of the complexity within organizations that brings to light such variables as the organizational culture, the adoption of innovations, social network analysis, and other elements that contribute to the complexity that defines the word “organization” today. Organizational learning, both inwardly focused and in response to the external environment, is one concept that has since dominated the change literature and will be discussed in further detail below.

To summarize, formal thought about organizations and change has evolved over the past 125 years from a mechanistic view in which institutions, including those in the academic arena, were perceived to function most effectively as top-down, hierarchically arranged entities requiring strict management, toward attention since World War II to the human side of organizations and the unique environments within and external to an organization that profoundly affect its operations. Change as handed down in a linear fashion from a controlling upper-level management has been replaced with an understanding that meaningful and lasting change occurs within the dynamic interplay of a complexity of variables. Awareness of the evolution in thought about organizations creates a richer context within which change can be further
considered. The next section reviews contemporary theories that provide the foundation for organizational change processes.

Organizations: A Theoretical Perspective

Although every organization is unique, all organizations share some common elements—social, psychological, and behavioral structures—making the application of principles across organizational settings possible. The next section reviews contemporary theories that provide the foundation for organizational change processes.

What is known about change in non-dental school environments, such as in higher education and in other professional education, can be useful and timely to dental education as it faces calls for change.

There are numerous individual theories or models of change reported in the literature, which authors have attempted to group according to similarities. Although each model adopts a unique perspective on change, all address questions of why a change occurs, how it unfolds, the timing of when it occurs and how long it takes, and what its outcomes are. A summary of six main categories of change theories, primarily based on the work of Kezar, is presented in Table 1.

Each of the six categories of theory underlies a different perspective on why organizations change. It should be noted, however, that these distinctions represent a theoretical dissection for the purpose of analysis and that, in reality, an organization may exhibit an overlap of more than one approach to change for any given situation. Those who are armed with a better understanding of why a change is being contemplated can then tackle issues related to managing the change process by utilizing the best approach.

Change Models in Higher Education

Most of the research findings related to change in educational settings come from studies in higher education, although literature exists in which principles from change research in higher education have been examined in professional education settings, for example, in schools of medicine, nursing, pharmacy, occupational therapy, social work, and education. A more in-depth exploration of the principles of change in higher education follows and will be discussed within the context of dental education in the following section.

A meta-analysis conducted by Kezar of thirty years of organizational change research in higher education revealed that, due to the unique culture found in academic settings, change in higher education can best be explained through three of the six change models listed in Table 1: the political, social-cognitive, and cultural models. The political model for creating change emphasizes the importance in academic settings of such things as interest groups and power in influencing change, the significance of informal processes such as behind-the-scenes communication, and the effectiveness of persistence—that is, that those who persist in bringing up an idea for change and who provide strategies were the most likely to make the change occur. The social-cognitive model of change views a school’s internal environment to be more influential on change than the external environment. Such things as discussion, debate, reframing, and sense-making (helping faculty and students comprehend the key concepts underlying the change proposal) are inherent processes in university environments and are important elements in the change process according to the social-cogni-

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<th>Table 1. Six categories of organizational change models</th>
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<td>Change Model</td>
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<td>Evolutionary</td>
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<td>Life Cycle</td>
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<td>Dialectical (Political)</td>
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<td>Social-Cognitive</td>
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<td>Cultural</td>
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tive model of change. Finally, the cultural model focuses on the importance of campus history and tradition and of symbolic events and activities, such as a well-attended town hall meeting or kick-off event to fuel the momentum for change. As a result of this meta-analysis, seventeen research-based principles of change in higher education were described by Kezar and appear in Table 2.

These principles of change could be adapted for use in a dental education environment as the first building blocks of a change model that individual dental schools may find useful. Although theoretical or actual assessments of the institutional environment and the application of various change processes in dental education are not yet available in the literature, a number of authors have speculated about the dental education environment and its responsiveness to change. These observations, which are outlined in the next section, together with the seventeen research-based principles of change in higher education outlined in Table 2 will be incorporated into a hypothetical model for change in a dental school setting.

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Table 2. Seventeen principles of change in higher education and implications for management of the change process

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<thead>
<tr>
<th>Research-Based Principle of Change</th>
<th>Description and Implications for Change</th>
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<tr>
<td>1. Promote organizational self-discovery.</td>
<td>Existing structure and internal environment (history, habits, and norms that shape institutional practice and philosophies) profoundly influence change. Mechanisms that draw people together to talk, relate, and understand issues will enhance change efforts.</td>
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<td>2. Realize that the culture of the institution (and institutional type) affects change.</td>
<td>The unique culture found in each academic institution shapes the way a change emerges, the process of change, and the outcomes. Institutions should assess their culture and tailor a change strategy accordingly.</td>
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<td>3. Be aware of politics.</td>
<td>Given the political nature of organizations and institutions of higher education in particular, advocates for change must develop an understanding of alliances, coalitions, people of influence, how informal processes can be used, what conflicts exist, and what motivations underlie the change and those resistant to it.</td>
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<tr>
<td>4. Lay groundwork.</td>
<td>Planning processes should begin with groundwork that includes self-assessment, institutional audits, and an analysis of the change proposal for institutional compatibility.</td>
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<td>5. Focus on adaptability.</td>
<td>Deep, pervasive change (transformational) is difficult to achieve across an entire academic setting. Rather, initiating incremental changes and creating an environment that supports innovation will result in more lasting change.</td>
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<td>6. Facilitate interaction to develop new mental models and sense-making.</td>
<td>In academic settings, explanation and rationale are powerful tools for managing change. All those involved should be brought together through strategic planning, committee work, staff and faculty development, and events in order to help them develop understanding, new mental models, and new language about the changes.</td>
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<td>7. Balance external forces with the internal environment.</td>
<td>In academic settings, the environment within the institution has a greater effect on change than outside influences. Leaders should directly respond to external forces only when there is a clear indication that an external factor will adversely influence school operations or policy. When change to external forces is indicated, leaders should ensure widespread dialogue and decision making within the school.</td>
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<td>8. Help people understand a logical progression to the end results.</td>
<td>The use of metaphors, stories, and symbolism should be combined with establishing a vision, planning, and assessment, in order to make the change initiative understandable.</td>
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Change in Dental Education

Many authors have offered observations about the dental education environment and how those elements might effect change. Some of those observations are grouped according to themes and presented in Table 3.

These various observations reveal the perceptions that dental education, for the most part, is dominated by traditional curricula and teaching models; is plagued by a continued disconnect between the biomedical and dental sciences and among the dental disciplines; and is challenged by a workforce composition that includes full-time/part-time faculty, tenure/non-tenure-track appointments, and research/clinical/discipline-specific faculty, resulting in little opportunity to integrate curricula or practice. In addition, many retiring practitioners who are the main source of new faculty for many dental schools are generally not enthusiastic about working in a chaotic environment where change is happening and may have little personal energy for, or commitment to, a change process, given the fact that they largely

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<td>9.</td>
<td>Realize that change is a disorderly process.</td>
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<td>10.</td>
<td>Promote shared governance or collective decision making.</td>
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<td>11.</td>
<td>Articulate and maintain core characteristics.</td>
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<td>12.</td>
<td>Be aware of image.</td>
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<td>13.</td>
<td>Connect the change process to individual and institutional identity.</td>
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<td>14.</td>
<td>Create a culture of risk, and help people to change belief systems.</td>
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<td>15.</td>
<td>Use multiple perspectives when viewing a change, and realize that various aspects of the organization will need different change models.</td>
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<td>16.</td>
<td>Vary the change strategy by change initiative.</td>
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<td>17.</td>
<td>Combine models or approaches to change.</td>
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Forced orderly approaches to change often fail in academic institutions. Being open to ambiguity and to nonlinear processes is important for institutional leaders and change agents to understand. Higher education is characterized by a culture of shared governance. Joint activities of administrators and faculty are needed to ensure success in collaborative change efforts. Academic institutions often have strong cultures, traditions, and history. In addition to focusing on what and why things need to change, it is important to communicate core values, continuity, and the things the institution wants to preserve and why. Higher education institutions are concerned with institutional image and are influenced by other “leading” institutions and by national organizations; therefore, appealing to institutional image and emulation can be used as a lever for positive change. Identity (deeply entrenched beliefs, habits, and norms) is important to the change process in higher education. Discussions related to the mission and other methods are needed to achieve the goal of engaging both institutional- and individual-level identities. In order to achieve stability and efficiency, people need to feel comfortable making different choices under new conditions. Create an environment that is supportive of risk and allows change without blame or reprimand. Each part of the organization has specific characteristics and needs, making a multiple perspectives approach to change necessary. A combination of political, cultural, and other approaches should guide the management of change in individual areas and in the institution as a whole. Each change initiative has a unique nature, necessitating alignment with an appropriate change strategy. Institutions need to evaluate the change initiative (is it more procedural, cultural, political, etc.) and design a change strategy accordingly. Different strategies and models of change should be combined in order to customize an approach that is suitable for an individual school.

see themselves as five- to ten-year employees transitioning from their practice or military careers into retirement.15,39

As seen in Table 3, other factors influencing change in dental education are the strong influences of its internal and external environments. Internally, dental schools, for the most part, have not traditionally cultivated a culture or reward system that values teaching excellence, evidence-based educational methodology, or scholarship that might otherwise predispose the faculty to openness to change and innovation. Faculty members often work autonomously, contributing further to the challenge of integration and change. From the external environment, some assert that the most powerful constraints to change in dental education arise from national board, licensure, accreditation, and reimbursement issues—all of which occur in the milieu of dwindling financial and workforce resources. With these aspects of dental education in mind, taken together with the research-based principles of change in higher education mentioned previously, some guidelines to develop a model for change in dental education could be pondered:

1. Be aware of the distinctive characteristics of dental education.
2. Develop a process for systematic and systemic internal and external environmental assessment.
3. Realize the need to develop individual school context-based models of change.
4. Design methods to overcome structural, political, and cultural elements that may hinder change and innovation.

Table 3. Aspects of dental education that influence change, as described in the literature

| Entrenched curriculum design | • Little evidence of the universal urgency to incorporate twenty-first century science into the curriculum and thus to patient care. |
| • Disconnect between biomedical and dental disciplines. |
| • Comfort in a more vocational rather than academic direction to dental education. |
| • The need to convert clinical education to a general practice-based, comprehensive care model without an adequate number of faculty. |
| • Reliance on expert clinicians to teach without an institutional educational philosophy, resulting in factionalism and parochialism. |
| • Lack of alternative curricular models in dental education (most schools operate very similar educational programs). |

| Traditional teaching models | • Existing teaching models that emphasize teaching rather than learning. |
| • Deeply ingrained instructional behaviors and personal philosophies about a teacher's roles and relationship with students. |
| • Teaching and learning techniques that emphasize passive acquisition of information rather than active, student (self)-directed learning that promotes development of critical thinking skills. |
| • Information presented in unfocused contexts without planned coordination among courses and topics. |
| • Fully synchronized curriculum that does not allow faster learners to move on or slower learners to take more time. |
| • Tradition of anecdotal vs. evidence-based clinical practice. |
| • Remnants of requirements-based clinical education blended with comprehensive care patient-centered model, resulting in tensions between what is intended to be taught and what students learn. |

| Traditional structure and culture | • Strong tradition of departmental autonomy and faculty allegiance to disciplines rather than to the dental school as a whole. |
| • Departmentalization that contributes to parochialism and resistance to change. |
| • Lack of a learning culture that values teaching excellence, evidence-based educational methodology, faculty scholarship, and leadership. |
| • Prevailing personality of dental faculty (conservative, cautious, risk averse). |
| • Reluctance of faculty members to be critical of colleagues. |
| • Lack of faculty mobility among dental schools and high levels of inbred recruiting of own graduates, which encourages narrowness of vision. |

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5. Be cognizant of the human aspects of change. Work with individuals to enhance skills and confidence related to new behaviors and then reward desired behavior.
6. Foster creativity, adaptability, and sense-making during change.
7. Plan strategies to overcome traditional teaching and curriculum practices.
8. Balance change with maintaining valued traditions.
9. Find creative ways to engage the broader dental and health care communities in an effort to integrate dental practice and education.
10. Adopt a long-term perspective on change in order to keep pace with an ongoing and rapidly changing environment.

Organizational Change Management: A Practical Perspective

It is clear from anecdotal evidence (e.g., hallway talk at professional meetings) as well as findings from the Kassebaum et al. study that many dental schools have ongoing experience with managing change. However, the relationship between methods employed by these institutions to achieve structural or programmatic modifications and well-documented practices in change management may not be clear. This section summarizes change management themes.

Table 3, continued

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<thead>
<tr>
<th>External influencing factors</th>
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<td>• National boards, licensure, accreditation, and reimbursement issues perceived to be barriers to innovation and creativity.</td>
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<td>• Interdependence of oral health profession with other health professions (hard to change one without changing another).</td>
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<td>• Cottage industry mentality of the dental profession (tradition of “splendid isolation” from remainder of health care system).</td>
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<td>• Lack of an umbilicus connecting dental school and practice to the broader health care system, which hinders implementing an integrated model of dental education and patient care.</td>
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<td>• Relatively isolationist practice of dental specialties in practice and education settings.</td>
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<td>• Practice independence, which fosters rugged individualism and infrequent peer input—traits that predominate among the many boomer-age practitioners who are currently the main source of new faculty.</td>
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<tr>
<td>• Political nature of organized dentistry and dental education.</td>
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<td>• Lack of transformational leadership in organized and academic dentistry.</td>
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Financial and workforce constraints

• Perceived discrepancy in salary between careers in dental academic and private practice settings.
• Overall satisfaction with professional work-life, but dissatisfaction with professional development and support.
• Narrow financial margins, making it difficult to absorb costs associated with change (so the status quo or mere tweaking of the status quo prevails).
• Faculty manpower and economics: limited resources to recruit, develop, and retain talented dental faculty who advance the profession through teaching and research.
• Unique composition of full-time and part-time faculty, tenure- and non-tenure-track appointments, biomedicine and clinical faculty, and discipline-specific faculty—making it difficult to obtain consensus among competing interests.

that have particular relevance to change in dental schools, in hopes that they might inform or validate change efforts already under way or contemplated for the near future. The themes are reфraming organizational complexity; change leadership; values, competence, and commitment among employees; and organizational learning. These are followed by a brief look at resistance to change.

Reфraming Organizational Complexity

A widely used practical guide for reфraming the complexities within an organization is Bolman and Deal’s framework, which visualizes the organization through four main perspectives or lenses: the structural, human resource, political, and symbolic. The first lens gives focus to organizational structures that support an organization’s goals; these structures might include work roles, tasks, technology, and the environment. Effective organizational structure exhibits a clear division of labor and appropriate mechanisms to integrate individual, group, and organizational efforts. The human resource lens brings into focus issues related to individual and organizational needs (e.g., training, motivation, and rewards) and suggests that a healthy human relations environment is one in which the reciprocal needs of the organization and the individual are met. For example, humans have a need to express their talents and skills; organizations need human contributions to operate. When there is a good fit between these individual and organizational needs, both benefit. The political lens focuses on the issues of power, coalitions, negotiation, and conflict management. Due to the diversity of such factors as values, behaviors, skills, and interests, especially within an environment of limited resources, management of political influences is key. Finally, Bolman and Deal refer to a symbolic frame through which organizations are viewed as social and cultural entities, in which emphasis on meaning, purpose, and values is important. Because culture reflects shared values and beliefs, creating a common vision and excitement through ceremonies, rituals, and symbols is an important aspect of an organization.

When applied to managing a planned change, the Bolman and Deal framework can be a useful tool to systematically evaluate each of these four aspects of an organization and to proactively anticipate within which area an organization’s strengths and potential barriers to change may exist. A more detailed list of issues related to each frame is outlined in Table 4. The practical implications of the Bolman and Deal framework are indicated in the right column.

Change Leadership

The importance of the leadership role in managing change has been unequivocally demonstrated. Although the literature on leadership is immense, making it difficult to select representative material germane to academic dentistry, a logical choice for the discussion of leadership in academic settings is the previously described ACE initiative on change in higher education. The findings of this national study of many institutions demonstrate that the effect of leadership on organizational culture and the change process is profound. Some of the conclusions about effective change leadership from the ACE study are the following:

• Change leaders display attitudes and approaches that facilitate change by 1) anchoring the change in academic values; 2) creating a culture of trust; and 3) adopting a long-term perspective on change.
• Change leaders help people develop new ways of thinking in addition to different practices, structures, and policies.
• Change leaders foster new thinking by allowing the questioning of the status quo and by encouraging faculty to explore how and why current mechanisms have become insufficient; change leaders also question assumptions and encourage others to do so; they create and communicate new ideas, develop new language, and attach new meanings to familiar language and concepts.
• Change leaders understand that people respond differently to the same information, react to different stimuli, and are motivated differently, necessitating a variety of approaches to communicate a common message.
• Change leaders frame a positive change agenda that is persistently and clearly communicated.
• Change leaders are cognizant of the change process and adjust their actions in response to what they learn from stakeholders and dissenters.
• Change leaders are sensitive to the balance among speed, deliberation, and persistence; they intentionally regulate the intensity of the change effort.
• Change leaders find ways to negotiate and to resolve conflicts (or at least to hear all parties) and then keep moving.
Values, Competence, and Commitment

The importance of basing organizational goals on shared values appears throughout change literature and cannot be underestimated. Successful leaders are described as being able to communicate how the goals of an organization relate to individual values and desires and how the success of the organization inspires individual gains.\(^4^2\) Impressive momentum for a change can come about if individuals share a view of what can and should be and, in particular, if that vision fits with individual and collective values and goals.

But what if the prevailing wind is “if it ain’t broke, don’t fix it”? How does a leader or change agent effect change when the majority believes the status quo seems perfectly fine or is, at least, acceptable? A possible tactic is to reframe the issue using facts. Inside-the-box definitions most likely result in inside-the-box solutions (or non-action and resistance if people believe there is no need to change). Instead, by using hard data as a foundation (a method that appeals to most educators and researchers), a problem could be reframed by not only describing it, but by emphasizing a pivotal issue in a compelling way that leads to the inevitable questioning of the status quo. In other words, the answer to the question “if it ain’t broke, why fix it?” lies in one’s narrow interpretation of the word “broke.” One method for reframing an issue in this way has been described as taking three steps.\(^4^1\) First, discuss the conventional interpretation of a situation so that everyone begins with a common understanding. Second, point out exceptions to the norm that are working especially well either in the workplace or in other settings. Finally, reframe the problem focusing on the exceptions and cultivate home-grown solutions through widespread participation in a safe and supportive environment. The bottom line: change leaders in a resistant or apathetic environment must nurture ownership, not buy-in. It is far more effective to induce a change (through new ways of thinking about a problem) than to impose a change.\(^3^1\)

<table>
<thead>
<tr>
<th>Frame</th>
<th>Issues</th>
<th>Path to Organizational Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural</td>
<td>Rules, regulations, goals, policies, roles, tasks, job designs, job descriptions, technology, environment, chain of command, vertical and horizontal coordinating mechanisms, assessment and reward systems, standard operating procedures, authority spans and structures, spans of control, specialization and division of labor, information systems, formal feedback loops, boundary scanning, and management processes.</td>
<td>Develop and implement a clear division of labor for accomplishing the tasks necessary to move the change process forward. Create appropriate mechanisms to integrate individual, group, and unit efforts. Provide effective and diligent overall management of the change process.</td>
</tr>
<tr>
<td>Human resource</td>
<td>Needs, skills, relationships, norms, perceptions and attitudes, morale, motivation, training and development, interpersonal and group dynamics, supervision, teams, job satisfaction, participation and involvement, informal organization, support, respect for diversity, and formal and informal leadership.</td>
<td>Tailor the organization to meet individual needs. Train the individual in relevant skills to meet new organizational needs.</td>
</tr>
<tr>
<td>Political</td>
<td>Key stakeholders, divergent interests, scarce resources, areas of uncertainty, individual and group agendas, sources and bases of power, power distributions, formal and informal resource allocation systems and processes, influence, conflict, competition, politicking, coalitions, formal and informal alliances and networks, interdependence, control of rewards and punishment, and informal communication channels.</td>
<td>Identify and engage, both formally and informally, key individuals with influence. Bargain, negotiate, build coalitions, set agendas, and manage conflict.</td>
</tr>
<tr>
<td>Symbolic</td>
<td>Culture, rituals, ceremonies, stories, myths, symbols, metaphors, meaning, spirituality, values, vision, charisma, passions, and commitments.</td>
<td>Create a common vision. Devise relevant rituals, ceremonies, and symbols. Manage meaning. Infuse the culture with passion, creativity, and soul.</td>
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Of course, the notion of effective leadership predicates the existence of competent and committed employees. Dave Ulrich, in his 1998 article titled “Intellectual Capital = Competence x Commitment,” suggests ways to increase competence within an organization: “buy, build, borrow, bounce, and bind.” “Buy” talent through hiring of competent individuals; “build” talent through training and development; “borrow” talent through partnerships outside the organization; “bounce” individuals with low or sub-par performance; and “bind” or retain good talent. This scenario is not unlike Jim Collins’s 2001 Good to Great analogy “First you have to get the right people on the bus (and the wrong people off the bus), and then figure out where to drive it.”

Many leaders of organizations ponder “just how do you ensure committed employees?” Creating a sense of community, clarifying the mission, guaranteeing organizational justice, supporting employee development, and, most important, valuing individual organizational members is one reportedly effective combination to cultivate employee commitment.

The following statement by Pfeffer and Veiga effectively summarizes the issues of employee commitment and competence:

Simply put, people work harder because of the increased involvement and commitment that come from having more control and say in their work; people work smarter because they are encouraged to build skills and competence; and people work more responsibly because more responsibility is placed in hands of employees farther down in the organization. These practices work not because of some mystical process, but because they are grounded in sound social science principles that have been shown to be effective by a great deal of evidence. And they make sense.

Organizational Learning

A theme that has dominated change literature in recent decades, and has particular relevance to change in dental education, is individual and organizational learning in which personal and institutional matura-tion occurs through self-reflection and by means of open and effective communication. In an article titled “Teaching Smart People How to Learn,” Chris Argyris asserts that most people in the workplace confuse “learning” with “problem-solving” and that they instead need to reflect critically on their own behavior and how it might be contributing to the organization’s problem. Argyris and Schon coined the terms “single-loop” and “double-loop” learning to distinguish between the two processes of learning and problem-solving. In single-loop learning, only a superficial treatment of a problem occurs, resulting in a quick fix or a new way of doing the same old thing. Double-loop learning reflects a deeper analysis of the underlying issues that, when addressed, can result in more meaningful problem-solving and change. The problem is that there is often a discrepancy between what people say they do (espoused theory) and what they actually do (theory in practice). Argyris and Schon encourage a “reflective practice” to realign the two and say it is especially necessary to do so when contemplating organizational change. With regard to teaching smart people how to learn, Argyris says:

Highly skilled professionals are frequently very good at single-loop learning. After all, they have spent much of their lives acquiring academic credentials, mastering one or a number of intellectual disciplines, and applying those disciplines to solve real-world problems. But ironically, this very fact helps explain why professionals are often so bad at double-loop learning.

Put simply, because many professionals are almost always successful at what they do, they rarely experience failure. And because they have rarely failed, they have never learned how to learn from failure. So whenever their single-loop learning strategies go wrong, they react defensively. In short, their ability to learn shuts down precisely at the moment they need it the most. . . . Teaching people how to reason about their behavior in new and more effective ways breaks down the defenses that block learning.

The first step in beginning to infuse double-loop learning in an organization is for leaders and managers to begin using it themselves by critically evaluating their own espoused theories and theories in practice. Next, the key to teaching others how to reason productively is to show how it can make a difference in their own performance and in that of the organization. There is much literature (both theoretical and lay) that addresses effective communication and conflict management. Although it is not always
comfortable practicing open and honest communication, the rewards that come from addressing underlying issues and developing effective solutions result in a collective satisfaction and momentum that can fuel further change. If practiced at the organizational level, open communication and reflection can result in an organization’s increased capacity to examine its internal and external environments and to adapt accordingly in a rapidly changing world.

Resistance to Change

No discussion about change would be complete without addressing the issue of its resistance. Interestingly, the change literature both acknowledges and discounts the notion of resistance. Most theorists believe that people do not resist change per se. Resistance to change is often more accurately described as resistance to ambiguity. In order to feel more comfortable, people need a sense of understanding why a change is proposed and, more important, how it is going to affect them and their work. They need proper resources and training to perform new tasks; from transformational leadership, we know that they need help and support in learning how to think in new ways and understanding they will not be penalized in the process. With needs met, ambiguity diminishes, as should the resistance to change. The practical techniques described here—such as Bolman and Deal’s framework for scanning the organization for potential change barriers; effective communication practices including negotiation and conflict management; and relating the change to individual values, competence, and commitment—are effective mechanisms to address resistance to change and necessary components of any organizational change toolkit.

Conclusions

This article presents only a taste of the vast information available regarding the organizational change process and its management. In this context, my goal is to stimulate further discussion about the relevance and application of organizational change theory, research, and heuristics to dental education. Further research is needed to better understand factors associated with successful and unsuccessful change in this as-of-yet little explored professional education setting. Future work needs to be done to identify unique elements of dental education environments before existing change theory can be validated or new theory about change in dental education can be generated. Ultimately, it would be beneficial if individual dental schools could assess their own readiness for change by being able to identify factors that enhance and detract from change initiatives upon which they choose to embark. What is clear is that any attempt at subsequent application of change theory in dental education will grind to a halt if schools continue to adhere to traditional models and environments that are riddled with barriers to change.

The biomedical information explosion that is pouring new information into the practice of the profession at an alarming rate has outpaced the current capacity for educational curricula to absorb. Recommendations for curricula content and new pedagogy are being introduced at an increasingly fervent pace, making concurrent guidance through the change process extremely beneficial. Similar to student competencies, one could imagine organizational competencies—in particular, those that induce desirable behaviors related to change and its management. Just as we face the calls for evidence-based practice and evidence-based education, we could include evidence-based change as the driver that underlies reform of any type. However, a call for balance when considering change must be made. It would be a mistake for schools to “change for change’s sake” in response to the current environment. Academic institutions, dental schools notwithstanding, are built on a foundation of long-standing tradition. Positive aspects of that tradition may not need to change and can serve as a durable foundation when reforms are considered that have the potential to enhance the academic, scholarly, and service outcomes of the overall institution. In other words, the old adage “don’t throw out the baby with the bathwater” certainly holds true for change in dental education as well.

Following discussion of the management of change up to this point, a few comments about complexity and chaos are in order. As we know, change is anything but orderly. Organizations can be thought of as dynamic nonlinear systems whose challenge is to keep operating amid seeming chaos. We can not possibly fully control, manage, or predict the world. Instead, change upon change should be anticipated. A dental school that is capable of continually scanning its environment and changing accordingly will prevail. Better yet, a school that adopts a “change as usual” modus operandi will better absorb external and internal pressures for change and may even inspire creative thinking about what might be coming on the horizon. The change process itself should be a learning experience. Any attempt at change...
(whether failed or successful) should, upon careful reflection, provide insight into the process that can inform future change efforts. In other words, an individual change initiative should not be measured in terms of its success or failure, but rather thought of as an experiment that provides invaluable information for future efforts. In sum, promising potential exists for those in dental education to view change as not the result of serendipity, but as a process that can and should be managed. A dental school could adopt the attitude that change is not something to be endured: it is a way of being. Ultimately, a society that is served by graduates from such an institution would benefit.

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REFERENCES