Faculty Development to Support Curriculum Change and Ensure the Future Vitality of Dental Education

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Abstract: For meaningful curriculum change to occur in dental schools, faculty must go through a process of new skills development that will prepare them to teach differently and to assess students differently than they have before. Curriculum change and the faculty development process must have the support of the dental school’s leadership and become a core value of the school’s culture.

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This article is one in a series of invited contributions by members of the dental and 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 ADEA CCI. The perspectives communicated here are those of the author.

Key words: faculty development, new skills, curriculum change

The American Dental Education Association’s Commission on Change and Innovation in Dental Education (CCI) outlines pathways for change that include new ways to educate dental students. These proposed changes include more emphasis on self-directed learning (SDL), critical thinking development, and lifelong learning. Kassem et al.’s survey from 2002-03 on the current state of dental education found that 80 percent of dental schools have a traditional-discipline, lecture-based, nonintegrated curriculum. However, 87 percent of dental schools surveyed felt that faculty development was needed to make curricular changes.

The need for faculty development in general is not unique to dentistry. A number of studies of medical school faculty development programs found that they were effective at developing teaching skills, building colleague relationships, initiating curriculum changes, and contributing to overall academic advancement. Unfortunately, Morahan et al.’s survey of U.S. medical schools found that no school has implemented a comprehensive faculty development system.

For real curriculum change to occur, dental schools must adopt well-conceived, comprehensive, faculty development programs. Such programs must clearly define the requisite skills needed for effectiveness in an academic environment that emphasizes self-directed learning and cultivation of students’ critical thinking. Faculty development programs also need to help faculty members navigate from the current steady state of a traditional curriculum through the unknown white-water rapids inevitably created by curriculum change. Moreover, the development of faculty members needs to extend beyond teaching them how to better utilize emerging technology. If the emphasis is solely on technology, it is probable that the outcome will be the creation of an e-version of current curriculum courses with very little change or integration. Rather, faculty development must focus on all of the necessary skills needed to transform the curriculum into an active-learning environment.

To be truly successful, a faculty development plan should be implemented in three stages and should allow faculty sufficient time to assimilate new knowledge and develop new skills. These stages are as follows: 1) focus on changing the culture/understanding the need for change; 2) prepare faculty to teach in the new curriculum; and 3) prepare faculty to assess learning in the new curriculum.
Stage 1: Focus on Changing the Culture/Understanding the Need for Change

In this stage of faculty development, efforts should be directed toward understanding what it will take in the organization’s culture to effectively make a curriculum change. It is logical to expect that, if dental education is to significantly change the way in which students learn, substantial efforts in faculty development are required, because nearly all of the faculty members who will be teaching in this new curriculum graduated from and have subsequently taught in a traditional curriculum. While a comprehensive faculty development program is necessary, modifying the institutional culture is an essential prerequisite to successful curriculum change.

The essence of an organization is expressed in its culture. Organizations rarely achieve significant change due to the immutability of their culture and its deeply implanted values. An example of a corporation that succeeded in changing its culture is IBM, which in the 1990s was compelled to transform its business model to ensure its own survival. To continue to compete as a leader in an ever-evolving market, IBM had to redirect its focus from computer components and mainframe and personal computing hardware to software development, networking, and support services. It was clear that, in order to effect this change, IBM had to address the deep-seated, long-standing traditions that were expressed in its culture. Some involved traditions that may appear cosmetic but were in fact expressions of its “buttoned-down” culture—for instance, the company dress code. Gone were the long-traditional dark business suits, white shirts, and ties; in their place, employees were encouraged to adopt the business casual look of their competitors. Other changes went even deeper into the company’s culture. No longer were employees guaranteed career-long employment, and for the first time in IBM’s history, massive layoffs were initiated to restructure the company. Employees during this time often found themselves confused, uncomfortable, and unsure about their future, as IBM morphed into a corporation that looks nothing like the “Big Blue” that was the darling of Wall Street in the 1950s, ’60s, and ’70s. However, the transformation was essential in positioning the company for success in today’s market.

Like IBM’s employees, dental educators must be prepared for a major transformation of their schools’ culture. The sweeping curriculum changes necessary to put dental education on the right course for dentistry’s future success will have little resemblance to the existing dental school culture and curriculum. Perhaps faculty members need to be reminded that curriculum change has been advocated since the Gies report in 1926, though it has not generally been implemented. Some schools may be prevented from adopting proposed curriculum changes if they are not able to recognize that the traditional curriculum is no longer effective in preparing students for dentistry’s future. However, the need for sweeping curriculum change at this point in dentistry’s history must overcome any desire of individuals to remain mired in the status quo.

To be effective, a school’s leadership must frequently provide faculty with justification of the need for curriculum change and remind them that their ultimate goal is to graduate better general dentists who are prepared for the future. The dental school’s administrative team, led by the dean, must also commit the resources to give all faculty members the opportunity to acquire the skills necessary to participate effectively in a new curriculum. This includes the commitment by the dean to dedicate substantial protected blocks of time and finances for faculty skill development.

If meaningful curriculum change is to be achieved, all faculty members must be involved in understanding the goals of the new curriculum and must be provided with regular updates on the progress of the evolution to a new structure. An open dialogue should be developed that shares in both celebrating the successes and analyzing the failures that will occur as a new curriculum is developed and implemented.

Dental school administrators will also have to consider the development of a revised reward system for faculty members, one that will encourage new curriculum development and innovation. For example, any curriculum changes that result in the integration of the curriculum currently taught in individual discipline-based courses must provide faculty with incentives, time to plan, credit for development of interdisciplinary learning experiences and rewards, and recognition for team teaching in these new modules. Faculty members may no longer be course directors, but may instead function as part of a team of instructors, drawn from several depart-
ments/disciplines, in a course where they are only partially responsible for its development, content, and evaluation methodology. This change may require schools to alter current promotion and tenure criteria to accommodate this changing role for faculty members and correctly determine if they are worthy of promotion and/or tenure.

Stage 2: Prepare Faculty to Teach in the New Curriculum

Developing self-directed learning and critical thinking skills in students poses a major paradigm shift for most faculty members. Therefore, effectively implementing a faculty development program will depend on focusing efforts on the real challenges. Currently, most faculty members impart knowledge to students in well-organized discrete lectures designed to tell students what they need to know about the subject matter. This “spoon-feeding” approach to education does not prepare the lifelong learners that dental educators have always desired to graduate. One challenge of faculty development, therefore, is to concentrate on transforming faculty from “knowledge imparters” to “knowledge developers.” In other words, faculty must evolve from those who deliver facts and information into those who guide students into becoming active learners, skilled at gathering and evaluating information. This will be no easy feat. As knowledgeable, information-laden expert faculty members observe eager novice learners struggling to discover the correct diagnosis or treatment, faculty will be constantly tempted to revert back to their traditional role of knowledge imparter. Faculty development programs should, therefore, focus on the requisite skills that faculty will need to teach in a new, active-learning curriculum. These skills include evidence-based practice strategies, small group facilitation, active lecturing, and the productive use of technology.

Every dental school will have a cadre of faculty members who will become early adopters of the initiative to change the curriculum. These individuals should be challenged to develop and pilot innovative course materials and share their successes with the rest of the faculty. In working with early adopters, it will be important to encourage them to experiment with unique teaching methodologies without fear of being blamed for failures. It is to be expected that failures or setbacks will occur when one is trying something new. Bland and Stritter's review of the literature on curriculum reform strategies and associated faculty development in medical schools found that schools undergoing a change process can expect a performance dip of two to three years’ duration as the institution adopts new teaching/learning methods by trial and error. Developing a culture in which innovation is encouraged and failures are accepted in the context of learning will be difficult for most dental schools, where excellence is expected and perfection is pursued.

The early adopters of the new curriculum can be utilized further as role models and mentors for other faculty members who are experiencing difficulties in adapting to change. It is often less intimidating for faculty members to seek advice on course development from their trusted peers. Early adopters who can demonstrate to other faculty members how a successful course change can be implemented will be invaluable to a dental school’s success in adopting curriculum change.

Stage 3: Prepare Faculty to Assess Learning in the New Curriculum

It is impossible to have true curriculum reform and develop innovative educational methodologies without also adopting corresponding relevant and valid assessment methods for student learning. These assessment methods should also facilitate the changing roles for faculty members, as they evolve from teachers to mentors who guide students through the quest to acquire, evaluate, and assimilate knowledge.

Licari and Chambers's survey data indicate that dental schools still rely heavily on the number of procedures completed and daily procedure grades to determine clinical competence and eligibility for graduation. The use of these evaluation methods indicates that dental school faculty members are still uncomfortable with adopting authentic evaluation methods that require more faculty judgment. Authentic evaluation relies on using faculty judgment to evaluate independent performance in realistic environments.

Self-directed learning and the development of critical thinking among dental students require that faculty members adopt higher order evaluation meth-
ods that assess the acquisition of these skills. These assessment methods must also be tested to make sure they are reliable and valid. Most traditional evaluation methods employed in dental schools assess students’ learning according to Bloom’s Knowledge and Comprehension levels. These levels assess a student’s ability to recall knowledge of major ideas, grasp meaning, interpret facts, and predict consequences. However, to prepare dental students to analyze, synthesize, and apply information, more sophisticated evaluation methodologies must be employed. These methodologies must include evaluations of a student’s ability to problem-solve, predict patient prognosis, draw conclusions about current treatments, apply principles to other patient conditions, and relate knowledge from several sources. Faculty members will therefore need to become comfortable in the use of higher order authentic evaluation methods such as the triple-jump examination, objective structured clinical exam (OSCE), faculty ratings, and portfolios.

Conclusion

True curriculum change designed to develop students who are active and self-directed learners will require dental schools to implement comprehensive faculty development programs that focus on changing the school’s culture by having faculty develop new teaching and assessment skills. These professional development programs must reach beyond teaching faculty to utilize the latest technology. These programs should concentrate on expanding the role for faculty in learning new educational methodologies to create a new student learning environment. Dental school administrators must fully understand the need for change and make a commitment to provide the resources to facilitate this faculty development process and subsequently alter the criteria used to evaluate faculty for promotion and tenure.

REFERENCES