SMITHGROUP

DESIGNING FOR THE FUTURE OF DENTAL EDUCATION

ADEA Advisory Board Discussion, March 2023

NATIONAL CONTEXT

In March 2023, the ADEA Board of Directors Symposium reported on their initiative "New Thinking for the New Century: Preparing for the Next 100 Years"

After surveying over 700 ADEA members, a steering committee identified the three top challenges facing dental education that ADEA could influence:

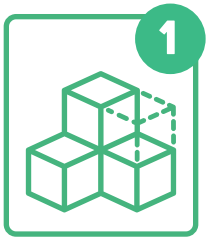
- faculty and staff recruitment
- leadership development and succession planning
- preparing students for the future of collaborative care

As leaders in the planning and design of environments for dental education and research, we consistently challenge ourselves as to how space can better respond to current and emerging challenges.

VISIONARY DENTAL EDUCATION:
FLEXIBLE, COLLABORATIVE & WELLNESS-FOCUSED

In March 2023, SmithGroup hosted an Advisory Board discussion in Portland, Oregon in conjunction with the 2023 American Dental Education Association's Annual Session & Exhibition. During this session, SmithGroup gathered deans from eight dental schools representing diverse perspectives for an interactive discussion focused on three main topics emerging from its recent post-occupancy evaluations (POEs) of dental schools nationally:

1. **DESIGN'S RELATIONSHIP TO CURRENT AND FUTURE PRACTICE MODELS**
2. **QUALITY OF THE EXPERIENCE FOR STUDENTS PATIENTS, AND FACULTY IN A DENTAL SCHOOL ENVIRONMENT**
3. **TECHNOLOGY INTEGRATION**



1 CURRENT AND FUTURE PRACTICE MODELS

Through SmithGroup's planning approach, we organize space and resources to reflect—and enhance—our client's clinical practice models. This approach results in a high degree of specificity in operatory planning and the distribution of clinic support. In SmithGroup's POEs, most respondents indicate the as-built clinic reinforces the targeted practice model, yet several noted that practice models inevitably change and flexibility in planning and design is critical to support change. The Advisory Board's first discussion topic explored how design can reflect current pedagogical and practice models without limiting the potential for future innovation.

FLEXIBILITY IN THE GROUP PRACTICE MODEL

The group practice model breaks classes into smaller cohorts for clinical training and observation. Planning around this model calls for flexibility. Cohort sizes may change over time, driving the need to expand or contract the fixed chair count and space dedicated to the group. In addition, the group practice model may not be optimized for the delivery of specialty training to pre-doctoral students. Emergency dentistry, oral diagnosis and endodontics are better delivered outside the group practice in specially equipped—and managed—clinics.

One dean shared a lesson learned related to rethinking the school's use of space to improve the consistency of group practice and discipline-specific, specialty training.

"We ended up going from eight group practices to six, then we converted the two, 18-chair clinics into implant-specific, removable emergency and endodontic sections," he said. "We had the flexibility of the group practice setup to do that and, as a result, can deliver education more consistently."

Another scenario dealt with a decision maker who preferred a more generalized philosophy—one that eliminated specialty "silos." However, it was challenging for many faculty to embrace an integrated approach. The potential for differing philosophies of care also underscores the importance of flexibility, exploring modular approaches and collaborating with furniture and interior solutions providers to develop innovative approaches to the clinic environment.

INTEGRATION OF SERVICES FOR OVERALL PATIENT WELLBEING

Oral healthcare is often a gateway that opens the door for patients to receive broader care. Dental health frequently has a relationship to other health issues. The Advisory Board noted an interest in co-locating a range of services to support the overall health of dental patients, from chronic disease management to nutrition to mental health. One dean noted that approximately 27 million people see a dentist each year, but many fewer actually visit a primary care physician.

"Moving forward, maybe we don't think of it as a dental space, but as overall wellbeing support for the patient," he said. "We're doing a lot more around integrated practice and thinking about how we can deliver services within the operatory. For example, we've been in conversations with patients who need audiology screening, and we've had a nutritionist in as well. As we move forward with more collaborative care, how might we make those spaces more flexible for procedures, consultations and biomarker screenings?"

In some instances, existing spaces can be leveraged to provide complementary care. One dean is exploring use of vacant floors to prototype spaces that go further to engage other disciplines.

"In our building, the two top floors had been leased out to tech companies," she said. "But there are a lot of COVID-related vacancies downtown, so it opens an opportunity to look at exploring collaborations with other healthcare organizations in areas like sleep medicine."

Another dental school converted an operatory into a medical exam room that includes a nurse practitioner who can provide care for related concerns, as well as vaccinations. The model has been successful, given shortages in primary care physicians (PCP) and the number of patients without health insurance or a PCP of their own. While the conversion of space was relatively easy, the biggest challenge was navigating state requirements for medical provider facilities relative to sinks, casework and other considerations.

"Part of that lesson is that these spaces need to be flexible," the dean said. "We have to be in a position where we can relatively easily modify these spaces for what's going to happen in the next 10 years."

EXPLORING PRE-CLINICAL SPACE

During the design process, a significant emphasis is placed on the design of experiences within the clinical space, due to the uniqueness of student and patient engagement However, pre-clinical space presents an opportunity for additional exploration and innovation to make best use of the real estate and improve learning experiences for students

Pre-clinical space is an intermediate step between foundational learning and seeing a patient. Pre-clinical space is used differently depending on the curriculum. One Advisory Board participant found their dedicated pre-clinical space isn't used as often as other areas. Another dean has found success with a fully mobile pre-clinical simulation clinic.

2 QUALITY OF THE DENTAL SCHOOL ENVIRONMENT

A primary goal of SmithGroup's work is to create spaces that support the wellbeing of the entire dental school community, including patients. This emphasis on patient experience generates welcoming and calming environments, with access to daylight and exterior views. More than 90% of POE respondents stated that access to daylight and views are important to them, and more than 80% noted that patients appreciate these benefits.

The quality of the physical environment is one of the factors students use when choosing a dental school. Faculty and student expectations are high as it relates to technology and space. The healthcare field in general is having challenges attracting and maintaining qualified personnel and this is creating the demand for new kinds of spaces and experiences to foster wellness, wellbeing and community. The deans concurred with the importance of considering the dimensions of wellbeing to improve the experience for students, faculty, and patients and acknowledged that changes in behavior are also critical to support wellbeing

SPACES THAT SUPPORT THE PATIENT COMMUNITY

Dentistry is a high-touch profession, and dental education includes a high level of interaction between students, faculty, and patients. Schools should consider including gathering spaces that support their communities and leverage in-person experiences. The quality of these spaces—and the engagement they promote—can support recruitment, retention and sense of belonging, which is important in high stress academic programs such as dentistry

"I think most of us lack the appropriate kind of social spaces for faculty and students," one dean noted. "Faculty need the ability to interact with one another to solve problems, and that doesn't happen unless there's a comfortable and convenient space where people can gather and have conversations."

"We have to create an environment where, when faculty come to the school, they're part of the family," another dean added.

A QUALITY ENVIRONMENT THROUGH QUALITY FACULTY-STUDENT ENGAGEMENT

Dental schools work with a variety of users. In addition, different patient populations and generations have different needs and priorities. With the need for community spaces that serve members of both academic and patient communities, designers should expand the breadth of stakeholders that they typically engage during the design process. Doing so will help program, plan, and shape spaces that meet a range of diverse needs while positioning the facility's users for future success. As an example, one of the findings from the POE process was to consider including a wider range of clinical staff in early planning and design meetings. These stakeholders have invaluable insights into clinical operations that can be critical for designing highly functional spaces.

3 TECHNOLOGY INTEGRATION

Dental clinics and individual operatories depend on a complex mix of contractor- and owner-provided equipment and systems. While 70% of POE respondents agreed that their dental operatory size and configuration were effective for providing care, some were less satisfied with the integration of displays and other patient-facing technology. The Advisory Board discussed challenges of technology and the trends they are seeing in dental education.

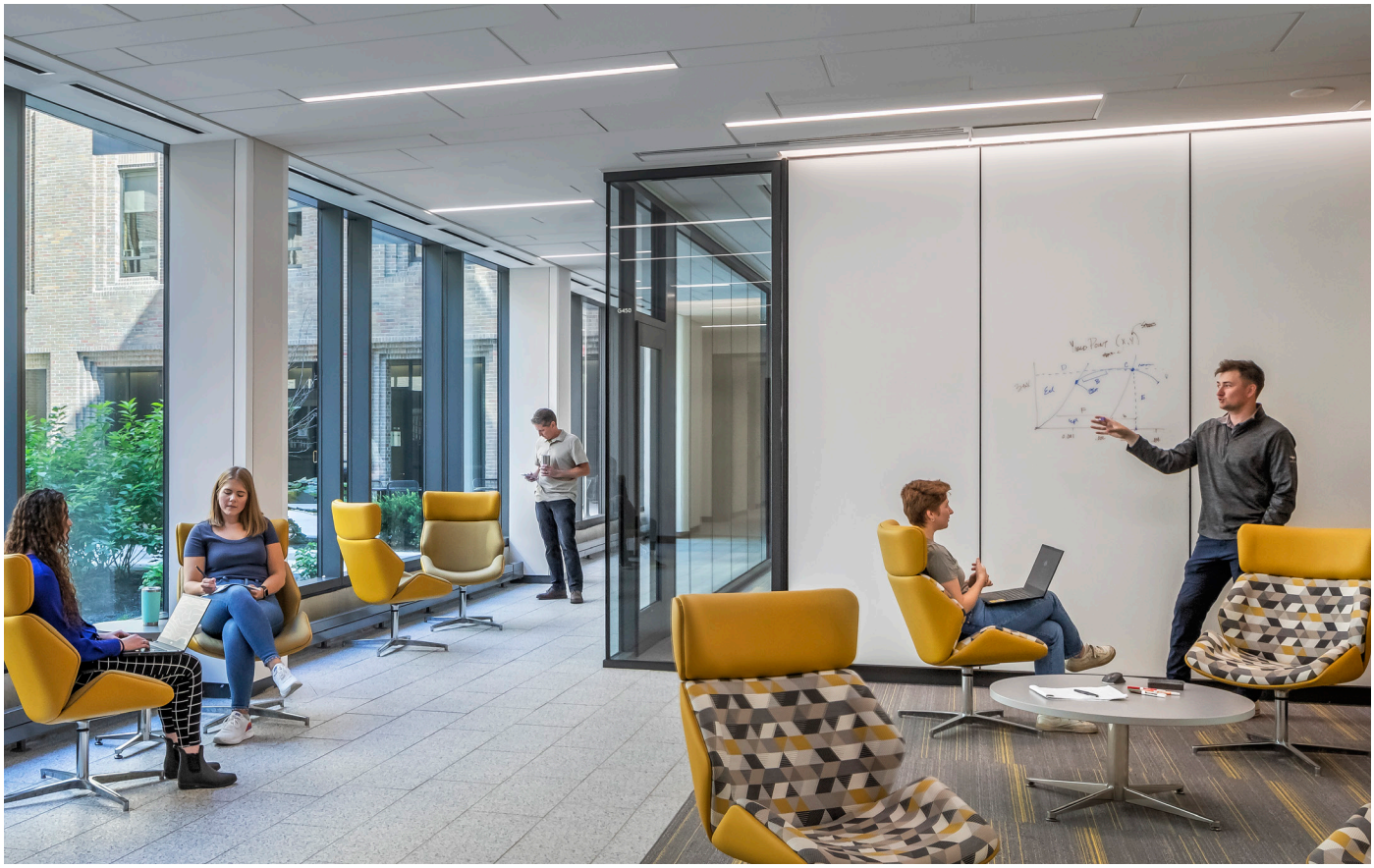
EXPANSION OF DIAGNOSTIC AND THERAPEUTIC TECHNOLOGIES

Given rapid advancements in technology and equipment, a flexible environment is key.

"It's not just about the technology today, but what's happening five years from now," one dean noted. "Some changes will require a smaller footprint, but there could be a brand new, bigger development that we're not even thinking about."

"We're exploring having space dedicated to technology and provide flexibility with some of the clinics to allow students to do CAD/CAM design," another dean added.

Both diagnostic technology and therapeutic technology (such as digital modeling, milling, 3D printing and potentially robotic surgical interfaces) will continue to develop. The placement of the equipment can vary—it can be fixed, mobile, docked, mounted, centrally stored, or hand-held—influencing the configuration of operatories. This presents an opportunity for design teams to collaborate with schools and equipment manufacturers to better understand emerging technologies and their integration into the care setting.



CONCLUSION

While dental education is constantly evolving, we're in a period of transformation, from artificial intelligence to virtual and augmented reality. As one participant observed, "I've been a faculty member for more than 25 years, and this is the first time I have seen a major transition in dental education, yet I think in five years, we'll have an even better idea of how dental space will look in the next 20 years or so."

How can the design process for dental education increase the adaptability of space for future change? As a result of our POE process and Advisory Board dialogue, we are increasingly embracing an "inquiry mindset" challenging ourselves – and our clients – to think bigger:

- How can the design process foster calculated risk-taking to explore the viability of flexible models and prototypes?
- What metrics will define success? How is measurement integrated into the design process?
- In light of many organizational challenges, how can space be a vehicle to help our clients successfully achieve meaningful IPE and integration of services?
- Can the realization that pre-clinical learning is an area ripe for exploration and innovation be the testing ground to open doors for new partnerships?
- What methodologies are most successful to enable more diverse stakeholder groups (staff, community, students) to provide their valuable input into the design process?

For designers and institutions alike, collaboration, engagement, and an openness to new ways of thinking will allow us to continue preparing a diverse workforce to improve the health of individuals and communities.

Thank you to the dental school leaders who attended SmithGroup's Advisory Board discussion.

As architects, engineers and planners, we continually strive to understand each client's perspective and what is driving their business model. To do this, SmithGroup regularly conducts client forums to investigate current issues and trends affecting higher education facilities. These Advisory Boards help us understand the needs of our higher education clients well into the future and enable our planners and designers to discover new ways of achieving our clients' goals through design of the physical environment.

A sincere thank you to academic leadership who formed our 2023 Dental Education Advisory Board representing the following institutions:

- Boston University Henry M. Goldman School of Dental Medicine
- Harvard University School of Dental Medicine
- Loma Linda University School of Dentistry
- Tufts University School of Dental Medicine
- University of Michigan School of Dentistry
- University of the Pacific Dugoni School of Dentistry
- University of Pikeville College of Dental Medicine
- University of Washington School of Dentistry

SMITHGROUP

Design a Better Future

smithgroup.com