

Transforming Healthcare Through Interior Design Education

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ABSTRACT

PURPOSE

The healthcare design specialty is an emerging niche in the interior design field that requires unique knowledge, insight, and understanding. It is essential for students to research how interior design affects physical, psychological, and behavioral experiences among facility occupants, e.g., patients, families, staff, and visitors in healthcare spaces. Teams of researchers, physicians, hospital administrators, and nursing staff are increasingly joining interior designers and architects while seeking evidence-based design solutions for improved experiences and outcomes.

METHODOLOGY/Framework

Undergraduate students explored regional contexts as well as topical trends and best practices of healthcare design in order to formulate strategies for improved workflow, infection control, and staff-, family- and patient-centered benefits while renovating a hospital during a semester long project. Learning activities exhibited evidence of design concept exploration, student research, healthcare provider interviews, discipline specific terminology, awareness of topical resources, and investigation of building codes that informed critical thinking and problem solving. The resulting design proposals included detailed designs for specific departments selected by individual students. The full scope of the evidence-based project solution revealed space plans, elevations and

perspectives, furnishings and finishes FFE, reflected ceiling plans, custom casework drawings, and data/power plans. Final presentations were evaluated during an undergraduate research fair and through oral and visual presentations to design professionals in several venues.

IMPORTANCE OF TOPIC

Thoughtful evidence-based facility design can aid patients, staff and families during the healthcare experience. Solutions can increase patient engagement and satisfaction with the overall quality of care provided. Interior design students will value a study of complexities in the science and art of healthcare environments that result in design.

RELEVANCE TO INTERIOR DESIGN

It is essential for students to consider how interior design interfaces with medical equipment, medical conditions, delivery of healthcare services, and while meeting the needs of diverse users of these distinctive spaces. Successful healthcare design is attentive to the needs of patients, family, and staff. It considers ways to reduce medical errors, facilitate emerging technologies, address aesthetic contributions, and assure sustainable design to benefit building occupants and facility stakeholders. Effective design solutions enable infection control, evaluate options such as acuity adaptable patient rooms, and improve workflow efficiency. It is possible to transform healthcare experiences through interior design education.

NARRATIVE

INTRODUCTION/PURPOSE

The healthcare specialty of interior design requires unique knowledge. Interior design education should provide significant experiences for student learning about healthcare design. Today, healthcare facilities are challenged with attaining diverse goals while satisfying expectations and requirements from distinct and sometimes disparate entities. Students should explore and responded to these challenges in the educational context. The learning process should enable students to gain insight into: the diverse and evolving expectations of stakeholders; the healthcare public policy in our contemporary society; code regulations, health conditions, work conditions, medical professions, and healthcare services; medical technologies and equipment; and best practices for delivery of care. (Kobus, 2008)

Teams of researchers, physicians, hospital administrators, and nursing staff are increasingly joining interior designers and architects while seeking evidence-based design solutions for improved experiences and outcomes. The study of healthcare should lead students to understanding how healthcare experiences affect and are affected by human behavior. Focused study about healthcare can provide useful insights and enable design responses that submit to the physical, psychological, and behavioral experiences among facility occupants, e.g., patients, families, staff, and visitors in healthcare spaces. Exposing students to the depth of the study increases their capacity to respond to design challenges and improve healthcare experiences in their future careers. (Nussbaumer, 2010)

METHODOLOGY/Framework

Undergraduate students enrolled in the capstone interior design studio during the senior year. The semester-long course sought to guide students individually and collaboratively toward significant healthcare design experiences. Limitations for the course conceded that research as well as design application would be necessary to attain goals for the course. The course began with an overview of current trends in healthcare. It was assumed students were minimally aware of the actual healthcare context and its influence on healthcare design professionals, today. The overview supplied students with a snapshot of challenges healthcare management face. Exposure into the true breadth of stakeholders prompted a shift in student assumptions. Key data revealed evidence of healthcare pressures on staff, and it reminded the student of escalating technological practices in medical care. Environmental trends and aspects of the built environment reviewed how the interior design of a facility could contribute to outcomes in the healthcare setting.

The first assignment dispersed 100 healthcare related terms among the students. Definitions for the terms were researched and shared collaboratively among the group. Later, students were tested to assure the discipline specific terminology was committed to personal memory. The terms proved to supply an understanding of the most significant contemporary issues in healthcare design. As research for the upcoming project began, students were more alert to healthcare terminology such as: acuity adaptable rooms, bay, ceiling lift, copper/silver ion, family zone, high-tech/high-touch, headwall, modalities, single-handed rooms, and Never-Events.

The professor secured plans for a 100,000 square foot hospital constructed in 1987 from a local architectural firm. This plan served as the course project, requiring renovation. The professor delivered a detailed lecture complete with design planning, codes research, and illustrative examples of intensive care units. The lecture paralleled the assigned course text, *Design for critical care: An evidence-based approach*, by Hamilton and Shepley. (2010)

Students were assigned one department or aspect of the hospital that required focused study and delivery of a presentation to the class over the next six weeks. As a result, students benefited from collaborative sharing of the information about multiple departments and significant aspects of a healthcare context such as infection control and wayfinding. (Malkin, 2008) Each student presentation required illustrations, reference to applicable codes, and current best practices about the research topic. Students discussed their findings via Power Point presentation, programming matrix, and topic specific client needs list. Following each presentation, students were able to revisit the findings through a shared file system on the campus server.

Continuing with collaborative learning, students were required to interview a healthcare provider. A detailed questionnaire formulated universal questions, though variances were allowed when beneficial during the interview. Transcripts of the interviews were shared in the networked system for all classmates to access. Students were allowed to independently choose a city for the project, gathering information about the

demographics, local culture and history, and social persona of the regional area in order to inform an emerging design concept. The students developed design solutions for the assigned hospital, individually, after having benefitted from the collaborative work of all class members and the professor. (Figure 1)

RESULTS:

The resulting design featured detailed solutions for five departments. Renovated intensive care units were required of all students portraying the delivery of care model that is family- and patient-centered. (Figure 4) The remaining four areas included the department that had been personally researched by each student plus any three additional departments of their choosing. (Figure 2, Figure 3) While focus on five departments or aspects was intended to assist students in managing the scope of the large-scale project, submissions revealed more ambitious renovations.

The evidence-based project solution revealed new spatial plans, elevations, perspectives, furnishings and finishes FFE, reflected ceiling plans, custom casework drawings, and data/power plans. In these, the students resolved needs through a staff-centered approach to design. (Figure 5) Application of healthcare codes proved to inform students about the delivery of care environment in ways they had not previously considered. (AIA, 2006) Students compiled binders that contained volumes of research, reprints of all class member topical studies, individual design process work, and publication of the final project solution. Student performance in the course section was highly competitive due in part to the high-level challenge in the assignment.

FEEDBACK:

Final presentations were evaluated in multiple venues. Oral presentations were observed by outside evaluators who practice healthcare design. One student was successful in a bid to present her study of infection control during an undergraduate research fair on the university campus. The student received an impressive accolade as one of the top five poster presentations among all entries. Final submissions were juried during local and national design competitions. Practitioner healthcare designers and members of the American Academy of Healthcare Interior Designers (AAHID) viewed an online posting of the submissions. The professor collected valuable feedback from the practitioners.

CONCLUSION:

Thoughtful evidence-based facility design can aid patients, staff and families during the healthcare experience. Interior design solutions can increase patient engagement and satisfaction with the overall quality of care, while mutually attaining goals of healthcare delivery and management. Interior design students will value a study of complexities in the science and art of healthcare environments that result in design. It is possible to transform healthcare experiences through interior design education.

APPENDIX

Figures content poster session display

Figure 1: Senior students enrolled in the capstone course prepared renovated space plans for a hospital built in 1987. The student identified a uniquely defining concept from regional geography and demographic aspects in order to inform the design response. Illustration by student. (Figure 1 Floor Plan.jpg)



Figure 2: Current best practices for patient room design resulted in specialized features meant to reduce staff errors and enhance infection control. Incorporation of a family zone has been shown to positively impact patient outcomes. Illustration by student. (Figure 2 Patient Room.jpg)



Figure 3: A welcoming and efficient solution resulted from student exploration into current trends in emergency waiting room design. Illustration by student. (Figure 3 ER Waiting.jpg)



Figure 4: The student researched specialized Intensive Care Unit requirements in order to prepare a design solution that was patient-, staff- and family-centered. Illustration by student. (Figure 4 ICU Unit.jpg)



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