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Promoting critical thinking during a pandemic

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1 | PROBLEM

The ability to foster critical thinking and problem solving is a standard that dental schools must meet according to the Commission on Dental Accreditation (CODA) Standard 2-10.[1] In a non-coronavirus disease 2019 (COVID-19) environment, one way this standard is met is during direct patient care sessions. This requires predoctoral students to apply the information gained during didactic foundation courses to clinical dentistry diagnosis and treatment planning, demonstrating both critical thinking and problem-solving skills. Patient care was restricted and deemed non-essential during the COVID-19 lockdown period. As a result, many dental schools were forced to search for creative ways to foster clinical critical thinking without directly involving patient care.

2 | SOLUTION

Many experienced dentists find considerable value from participating in organized study clubs after dental school graduation.[2] That concept was leveraged pre-graduation with 127 fourth-year dental students. They were assigned to 14 small-groups led by 23 faculties. Each small-group consisted of 8–9 students and 1–2 faculties. Due to social distancing guidelines and restrictions with in-person meetings, the study club meetings all occurred synchronously using Zoom Health.

This novel concept required multiple student and faculty orientation meetings at the beginning of the semester. For the first few weeks of the semester, course directors met synchronously with faculty several times a week to answer questions and provide advice on how to host and provide effective feedback during study club sessions. As the semester progressed, less faculty-specific meetings were required. However, weekly "class-wide huddles" were hosted the entire semester with all available faculty and students to reinforce the major points of previous sessions, provide just-in-time teaching, and emphasize the critical clinical concepts of new assignments.

The need to fill 6 credit hours of clinical content without direct patient contact was overwhelming. Three sources were centrally identified and assigned to the small groups. The central identification of content provided a consistent experience for all students and lessened the burden on the faculty members. The common content was:

- Digitized and de-identified patient records, photographs, and radiographs for standard patient treatment planning exercises.
- A 1-year paid subscription to Spear Online at a reduced university rate.[3]
- Guest presentations by faculty specialists focused on early learners in patient care.

3 | RESULTS

The small-group study club model exceeded expectations for a successful educational outcome. Faculty enjoyed working with the same students several hours a week for a 14-week semester. Because of the close working relationships built with the students in this recurring study club model, faculty were able to connect the principles of clinical dentistry and reinforce critical dental concepts demonstrating facets of the integrative pedagogical approach.[4] This level of application is something that students clamor

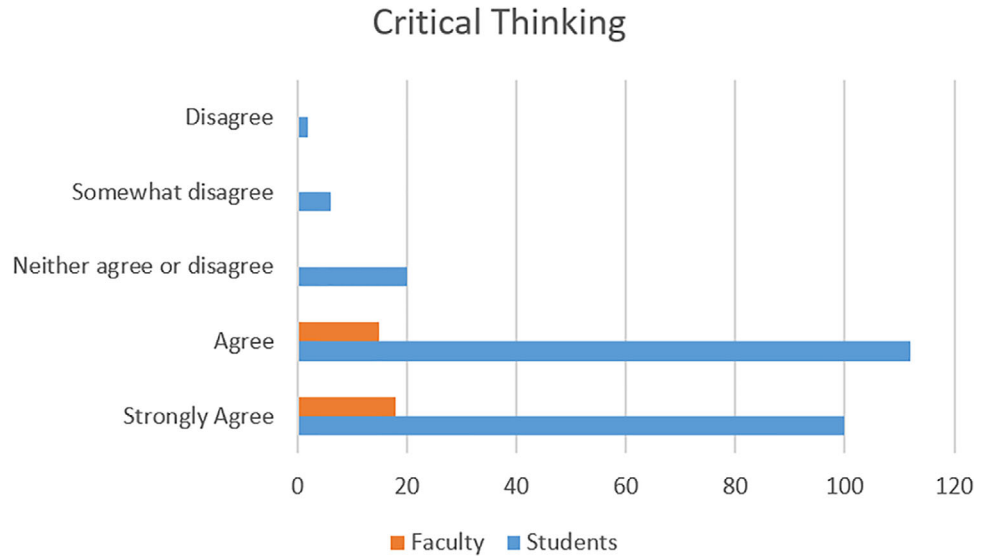

FIGURE 1 Development of critical thinking during small-group dynamics

for as they make the transition from didactic to preclinical and clinical courses. In this course, students had time to not only make sense of the learning process but also apply the learning to practical yet hypothetical situations, prompting more "aha moments" than ever before. Faculties were more available to create this type of environment and talk with students in more detail, even though they were not in the clinic. Faculty mentors agreed that this level of cognitive reinforcement of important dental principles is not always possible during direct patient care. Often, the pre-COVID-19 patient treatment model where faculty work with multiple students and patients during a single clinical session, does not allow time to discuss key concepts crucial to the development of problem solving and critical thinking skills.

The ability to continue this immersive study club model in a non-COVID-19 environment will be extremely difficult. The 8–10 hours spent reviewing assigned content, preparing for the study club sessions, and attending weekly synchronous meetings would be impossible to coordinate during a semester already busy with didactic and patient requirements for both students and faculty.

Clinical disciplines like dentistry benefit from a partner, learn, progress model of continuous clinical education.[5] Figure 1 shows a strong positive correlation with our cohort and how they perceived the development of critical thinking during small-group dynamics. Students and faculty both enjoyed the collegial nature of the study club format. Based on our experience, dental schools should explore methods to connect early learners with experienced clinicians in a regularly scheduled, less immersive study club setting as a normal part of their curriculum to encourage clinical growth and promote critical thinking.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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