



COVID & the Curriculum: Faculty Perspectives

NYU College of Dentistry > Departments/Faculty > Academy of Distinguished Educators > JADE > JADE 2022: Spring, Volume 8, No. One

Live-streaming: The Flipped Clinic Model for the Multidisciplinary Practice of Dentistry

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JADE: Spring 2022

Dean's Message

A Note from the JADE
Editorial Board Chair

Curriculum in the Time
of COVID

Adapting Curriculum to
the Integrated National
Board Dental
Examination

The Use of Plastinated
Prosections to Teach
Anatomy in the Time of
COVID-19

Recreating the Clinical
Competency in the
Zoom World of the
COVID-19 Pandemic

Live-streaming:

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The Flipped Clinic
Model for the
Multidisciplinary
Practice of
Dentistry

Modifying the D3
Clinical Applications in
Orthodontics Seminar

Redefining the ICP
Experience through
Online Learning

Student and Faculty
Perceptions of Dental
Education During the
COVID-19 Pandemic

2021 Clinical &
Educational
Scholarship Showcase
Abstracts

Introduction

Multidisciplinary Practice of Dentistry is a first-year DDS course at New York University College of Dentistry that introduces students to foundational knowledge and early clinical experiences. Traditionally, the course consists of three components: lectures, clinic sessions, and clinical observations by shadowing upper-classmates. While the COVID-19 pandemic has taught us the benefits of utilizing remote learning, the highest priority remains our ability to offer a quality clinical educational experience. The "flipped clinic" model is based on a flipped classroom (**Figure 1**), whereby instruction moves from the conventional classroom space to online learning and videos. In the "flipped clinic," students attend assigned clinic sessions via Zoom, which consists of faculty demonstrating procedures in the operatory with Q & A as appropriate.

FIGURE 1: Flipped classroom

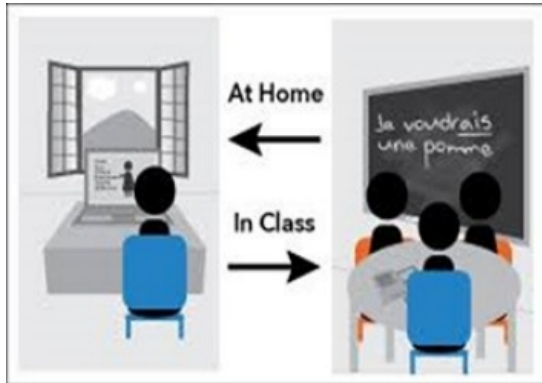


Image courtesy of ftlmag.com/the-flipped-classroom

FIGURE 2: Remote (Zoom) interaction



Methods

Students are interacting remotely (**Figure 2**) maintaining the same 60 students per session schedule.

Live session topics are recurring (same Zoom meeting ID held on the same day and time), and recorded for attendance purposes as well as for future reference.

Topics Covered

1 Infection Control Protocol:

- Demonstrate and discuss setting up the operatory prior to patient treatment using proper infection

control guidelines. Post-patient care clean up and how to leave the operatory ready for the next student dentist will be emphasized

- Demonstrate and discuss the importance of infection control protocol adherence in the clinical setting. Teach students about proper order and use of personal protective equipment (PPE), surface disinfectant use, and how to properly barrier wrap all high touch surfaces
- Appreciate the strict adherence to infection control protocol and understand why, when, and how it is carried out. Understand why infection control is critical to eliminating cross contamination and spread of disease.

2 Oral Hygiene Instruction and Plaque Control:

- How to use disclosing tablets before plaque control instructions
- Instruct students on how to brush using the Bass and Modified Bass techniques
- Select the appropriate dental aids and instruct students on their proper use.

3 Fluoride Varnish Application:

- Demonstrate and discuss when and how to apply fluoride varnish.

4 Head and Neck Examination, Carotid Pulse, and Vital Signs:

- Demonstrate how a head and neck exam is performed using a systematic approach
- Extraoral and intraoral inspection
- Distinguish normal from abnormal tissue structures
- Learn how to take vital signs: Blood pressure, pulse rate and respiratory rate.

5 Local Anesthesia:

- Demonstrate the different parts of the dental syringe
- Instruct on use of different needles
- Loading and unloading the dental syringe safely
- Various local anesthetics and their uses
- Demonstration of local anesthetic techniques.

Technology and Equipment Necessary for Livestreaming

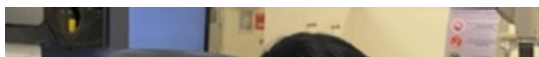
- The Zoom videoconferencing platform
- A smartphone to be used as demonstrated in **Figure 3**
- A smartphone-enabled tripod preferably with a ring light, as shown in **Figure 4**
- A dental operatory

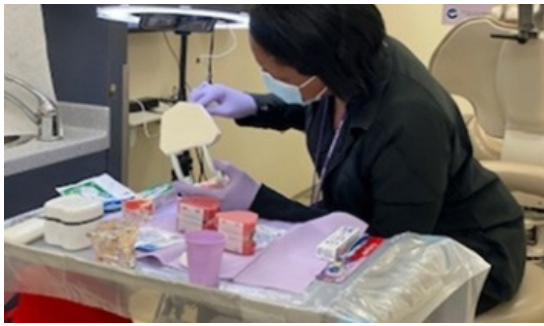
Students are able to pin the video which makes the screen and video larger giving it priority and clarity.

FIGURE 3: Smartphone in use



FIGURE 4: Tripod





▪ A dental operatory

Students are able to pin the video which makes the screen and video larger giving it priority and clarity.

Student Engagement

The Flipped Clinic model was a new modality of dental education at the College for all involved. In order to facilitate understanding of session content, on their own initiative students shared detailed notes and screen shots within their individual group practices as demonstrated in Figure 5.

FIGURE 5: In addition, in a sign of the times associated with Generation Z, one student took virtual instruction a step further and produced a Tik Tok video using her baby nephew to demonstrate oral hygiene in infants.

Dec 02, 2020 MPO Clinical Session 2 - Oral Hygiene Instruction and Plaque Control for the Adult Patient

The students will have the opportunity to apply the knowledge and skills learned in the respective lectures and labs in a clinical setting.

The student will: Use disclosing solution/tablet to disclose plaque on a classmate before plaque control instructions, and calculate the plaque index. Instruct a classmate on how to brush using the Bass technique. Select the appropriate interdental dental aids and instruct a classmate on their proper use in removing interdental proximal plaque. Perform the appropriate plaque removal on teacher self as instructed. Use disclosing solution/tablet to disclose plaque on a classmate after plaque control procedures are performed, and calculate the plaque index. Evaluate the classmate's performance on teacher efficiency in removing plaque and give feedback and guidance.

Q: Should I use charcoal toothpaste?

- NO: "Do not use it, please spend your money on worthwhile products"

Q: What's the proper brushing technique?

- **Bass** - bristle at 45deg to gumline, gently VIBRATE all around. Anterior: no vibration, just UP & DOWN
- **Modified bass** - same as above, but add SHREEP after vibrate

Q: How should I deal with bad breath?

- Whitiness on tongue is plaque. Brush tongue after teeth
- To prevent gag reflex, don't stick your tongue out and don't go too far

Q: What type of toothbrush should I use?

- Always recommend soft. Other types are too hard for normal tooth structure
- Tongue scraper is fine, but brush works just as fine
- We can give away toothbrush to patients

Q: Is an electric toothbrush better than manual?

- Easier to use than manual toothbrushes, but all toothbrushes are effective with the correct technique
- NEVER wet toothpaste because it splatters all over the place, less paste gets to be used on teeth

Q: How do I use Sensodyne toothpaste properly (PRO-enamel)?

- First line defense for sensitive teeth as it desensitizes the teeth
- **Instruction:** "Brush as normal, spit and re-rinse, spit, water for 30minutes"

Q: How to use the disclosing tablet?

- Have patient chew and swish around mouth for 30 seconds and spit
- Interacts and binds with plaque, showing exactly where plaque remains

Q: Waxed vs. unwaxed floss? How do I use floss?

- **Crowns & fillings** slide out from between the teeth rather than prying it back up
- **Waterpik** is good for interdental space: interdental brush or waterpik, but NOT for regular teeth

Q: How do I maintain my Brackets/wire (braces) and Bridges?

- **Floss threader instruction:** Long side and short side of floss while in threader, insert threader through the bracket/dummy tooth or pontic, pull out the short piece, remove threader and floss as usual. After done, slide floss out to the side
- **Interdental brush instruction:** Floss is better for contact points and interdental brush is better for gaps between teeth. It also cleans **under the wire**

Q: How do I clean my infant's mouth?

- **Instruction:** Wrap a piece of gauze wrapped around your finger, wet it in warm water. Support the head with other arm and clean cheeks and palate gently. **DON'T** use any toothpaste. **DON'T** go near the throat

Q: How do I maintain my dentures?

- Use **Poligrip**, denture brush, alcohol pad, **alka-seltzer tablet**
- **Instruction:** Wipe off poligrip using alcohol pad, NOT with denture brush. Fill bucket with warm water, add alka-seltzer and denture, and leave overnight in medicine cabinet. Brush gently side for teeth, brush side for gummy side
- If patient goes to **hospital for overnight surgery**, **LEAVE** dentures at home.
- Patients may lose their denture
- **Secure** it from children and pets



- **Waxed floss** glides between teeth better, so use for patients with tight contacts
- **Unwaxed floss** cleans better, picks-up more plaque
- **Floss picks** are only for back teeth, not the whole mouth
- **Instruction:** Use 18 inches. Wrap once around the non-dominant and rest on the dominant hand, but not too tightly because it cuts off circulation. See-saw your way in rather than snap the way in. Gums may bleed until accustomed to flossing. As you see-saw, let go of the dominant hand to release new floss. Pick-up unclean floss with non-dominant hand. Once past the contacts, hug the posterior and anterior portions and glide in a C-shape motion.



Summary

The safety and distancing protocols necessitated by the COVID-19 pandemic have challenged the in-person learning process. In order to continue to maintain the dental education experience, new innovative methods had to be applied. Live-streaming courses presents a viable option, taking advantage of technological advances in order to give first-year students an introduction to clinic through the multidisciplinary practice of dentistry. Adapting, strategizing, and taking a forward-thinking approach despite challenging circumstances can preface the clinical skills students need in order to maximize their educational experience.

DISCLOSURE

This paper was accepted as a TechExpo presentation by the American Dental Education Association held virtually on Friday March 12th, 2021.

REFERENCE

Redesima C, Kavanagh L, Hadgraft R, Smith N. *The Flipped Classroom Practice and Practices in Higher Education*. Singapore: Springer Singapore: Imprint: Springer; 2017

Read more in this issue of *JADE*

