



Achieving Excellence in Student's Learning Using New Technology

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Abstract

Introduction Achieving excellence in students once they enter the clinic poses a challenge to educators. New York University College of Dentistry implements technological programs that will help students achieve their goals.

Objective In Simulation courses the students are required to observe a DVD prior to class time that demonstrates the procedure on a typodont. In the clinical setting the students continue to use these tools and apply the skills that are learned and taught in the preclinical course to clinical practice.

Methods During the treatment plan process, when a patient needs an indirect restoration, the student is required to observe the DVD of the acquired procedure the day before the patient appointment. The DVD is available online through NYU classes' website.

The core technique at NYUCD is to make two preliminary impressions and pour them. Students are required to perform an indirect preparation on the cast and show it to their faculty. The faculty critically evaluates the preparation and gives the student a feedback. This creates a dialogue between student and educator. Students learn, the faculty asks open-ended questions allowing the students to think and assess. Once everything is approved by faculty, the student is ready to perform the procedure on the patient.

Conclusion By the use of DVD, Quick Time Digital Video, and virtual imaging the student will be able to increase their efficiency as they learn and develop clinical skills.

1. Introduction

Students at the New York University College of Dentistry are given the opportunity to take advantage of the state of the art technology. At the beginning of the simulation lab, during their second year of Esthetic Dentistry course the students are required to observe a DVD presentation prior to the simulation class that demonstrated the procedure on a typodont (Fig 1). Students learn the important principles of all esthetic procedures which include tooth colored inlay and onlay preparation, ceramic crown and gold onlay (Fig 2). Throughout the learning process, standardized faculty members are present to assist with preparation and temporization of the particular procedure.

Our challenge begins when the students enter the clinic. This is the time of transition between typodont teeth and human teeth.

Faculty teaches the student how to treatment plan and to apply what they previously learned in Simulation lab. Student are thought to assess the patient from a comprehensive point of view: taking into consideration the medical history, dental history, age of the patient, social history, and an overall clinical evaluation which include radiographic findings.[1]. They learn how to initially assess the condition of the patient so they can achieve a final result that is acceptable to the patient as well as meeting their expectation.[2].

2. Objective

The objective of this learning modality is to have the student:

1. Observe the DVD and prepare the procedure on the stone cast thereby improving the student's performance and understanding of the procedure.
2. In doing so, the student to achieve a better result while working on their respective patient.

3. Methods

During the treatment planning phase the student has to identify the criteria used in order to diagnose an inlay, onlay or crown. The student needs to demonstrate that the decay or fractured tooth is so extensive that a direct restoration, such as an amalgam or direct composite, would compromise the



structural integrity of the restored tooth or provide substandard opposition to occlusal forces, an indirect inlay restoration or a full crown may be indicated, such as cuspal fracture or if remaining tooth structure that undermines perimeter walls of a tooth, an onlay might be indicated [2]. That is when the student will implement his/her learning from observing the DVD digital video.

In order for a faculty to assess and give feedback to the students they had to attend a 2 hour lecture and 2 hour hands-on seminar in order to become standardized. Both preclinical and clinical faculty attended these seminars so that the students follow the same technique as they were taught in simulation lab and how it would be applied to the clinic. This would in turn alleviate the student's transition from a preclinical setting to practice in the clinic.

The NYU core procedure is to take two impressions of the patient's upper and lower teeth and pour them in stone cast. The student will perform the preparation and temporization on one of the stone cast according to the criteria taught (Fig 3).

The student will then do a wax-up of the indirect restoration on the second cast.

He/she will present both stone casts of the prepared tooth to the faculty to be evaluated. This starts a dialog between faculty and student and feedback is given

Once everything is approved, the student can start preparing the tooth.

The tooth preparation is performed by the student. When ready, faculty will evaluate the preparation and more feedback is given. Once approved, the student proceeds with either conventional or digital impression. [3].

Lastly, they will adjust and relin the acrylic temporary restoration made on the cast and proceed with the cementation

Each step of this procedure is been evaluated and approved by the standardized faculty. Faculty give feedback to the students by asking open ended questions and discuss the intricate part of the technique, such as all decay and unsupported enamel are removed, no undercut present, the proximal walls are tapered, both embrasures are opened and the pulpal floor is flat and deep enough to receive a tooth colored restoration.

4. Discussion

Treatment planning presentation, evaluation of the casts, all lead to student-faculty discussion, feedback, learning and improving clinical skills.

The student has a more profound understanding of the procedure by observing the DVD digital video, Performing the procedure on the stone cast gives the student the opportunity to apply his/her knowledge, improve their skills and receive feedback once more. By doing these repetitious steps, student learns the core procedure, how to think and diagnose, how to assess and implement technology to improve their knowledge and clinical skills.

The DVD digital video is available to the student and faculty on the NYU Classes course web page. Viewing the DVD prior to performing the procedure on the stone cast and on their patient makes the student more confident, more prepared and knowledgeable and less stressed when performing the procedure on the patient.

5. Conclusion

This DVD digital technology helps the student learn when to diagnose the indirect restorations, followed by preparing the procedure on the stone cast help them learn the core technique, increase their understanding of the final result and improving their clinical skills.

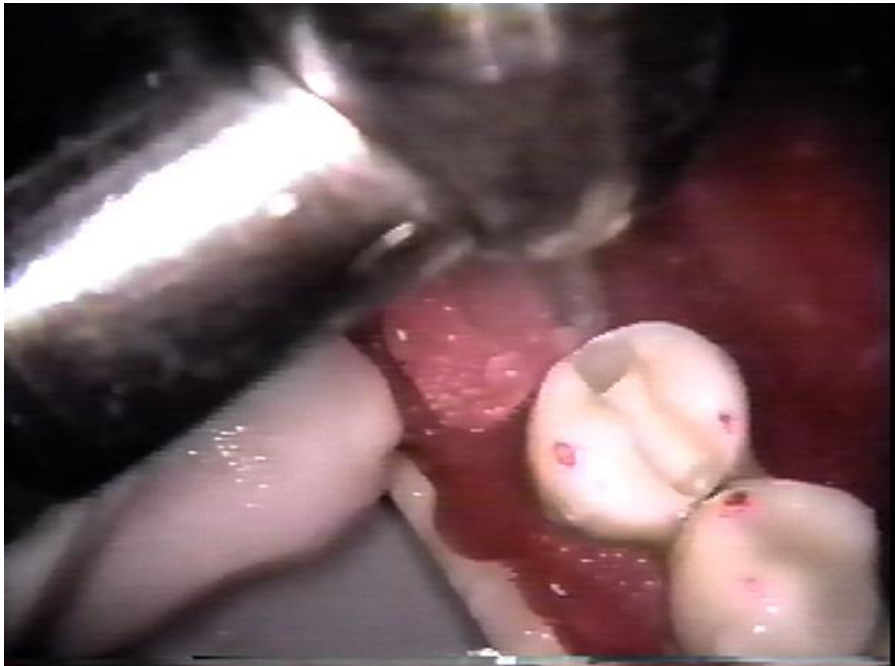


Fig 1. *Capture of the DVD demonstrating the preparation of a bicuspid.*



Fig 2. *The pulpal floor and the gingival floor of the box should be flat.*



Fig 3. *First attempt of an inlay preparation on a stone cast awaiting to be evaluated by a faculty.*

References

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