NYU DENTISTRY'S PERSONALIZED LEARNING PLATFORM:

Innovative Technology Leverages Memory Science to Facilitate Efficient and Least Stressful Ways for Students to Learn

In 2013, NYU Dentistry introduced a new educational technology called Cerego to help D1 students prepare for the anatomy section of the National Board Dental Examination, Part 1. Cerego is an innovative technological platform based on the pedagogical principle of independent learning, low-stakes tests, and other forms of repeated, spaced repetition. As a supplement to the core aspects of the Head and Neck Anatomy course — small group learning and the use of plastinations* — Cerego modules have proven effective and popular in facilitating students' learning and long-term retention of material in a manner that can be personalized to accommodate each student's learning style.

Cerego is built on proven memory science to help students learn faster and remember longer. This interactive learning tool enables students to review basic anatomical information prior to class, which helps them gain a better understanding of the more conceptually complex data they encounter while working with anatomical plastinations in the lab in a small group setting.

Cerego employs two primary learning concepts — memory retrieval and spaced practice — and adapts to each student's learning speed to ensure that they remember the material as it's presented. Throughout each lesson, Cerego tracks the length of time each student takes to answer a question and their accuracy in responding. The program uses

*Plastinations are dry, odorless anatomical specimens that are created by replacing water and lipids in biological tissues with reactive polymers, thereby eliminating toxic chemicals. NYU Dentistry has an extensive collection of exquisitely dissected heads, full bodies, and slices. Plastinations have been used in the teaching of Head and Neck Anatomy at NYU since 2004.

this data to determine which questions should be repeated, when the next review session should occur, and which of the five levels of competence the student has achieved, with the highest level being mastery.

Since the introduction of Cerego, NYU Dentistry students who have been taught anatomy using this technology have achieved a mean first-time pass rate of 98.6% on the National Board Dental Examination Part I. Even more exceptional than the pass rate is that our students' average anatomy scores have been two standard deviations above the national mean — placing NYU Dentistry in the top 2% of all dental schools in the nation.

While continuing to be used as a supplemental study aid in anatomy, Cerego is now widely used throughout the DDS curriculum by the Departments of Oral and Maxillofacial Pathology, Radiology and Oral Medicine; Molecular Pathobiology; Endodontics; and Dental Hygiene, all of which offer a mix of optional and mandatory engagement by students.

Dental students have enthusiastically embraced this new approach. Typical comments include:
- *"Very fun, exciting, and effective";*
- *"Great visualizations and repetition of questions that help solidify the information";* and
- *"thank you for helping me to prepare for the exam without the stress."*

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