

New Concept is Creating Positive *Momentum*

Dental Morphology, Function, and Esthetics at the University of Southern California

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The 145 freshman students at the Herman Ostrow School of Dentistry of the University of Southern California (USC) (Los Angeles, CA) have been exposed to a different kind of experience that started in summer 2012. The Dental Morphology and Occlusion module (now in its third cycle) was renamed Dental Morphology, Function and Esthetics (DMFE). I am the director of this module. The program extends over 30 weeks (two trimesters), during which resource sessions (90 minutes of classroom time per week) are offered, followed by extensive laboratory sessions and weekly assignments. Students undergo weekly evaluations in addition to midterms and final exams each trimester. Detailed step-by-step manuals and corresponding instructional movies are associated with each laboratory session and are accessible online at all times through the school's intranet.

One of the DMFE program's goals is to "unleash the artist within" each student while reflecting the most current trends in the dental profession: adhesive and implant dentistry. The module begins with numerous drawing exercises (Figs 1-3). Perceptual skills and artistic development ("right brain" activities) are fostered through visual art and the drawing of natural teeth (the two-dimensional [2D] phase of the module), simultaneously allowing students to learn morphology and nomenclature.¹

Another of the program's goals is to emphasize clinically relevant techniques for all laboratory exercises. The typodont model therefore is presented and considered as a new "patient." The production of diagnostic models (Fig 4) according to new standards provides better esthetic

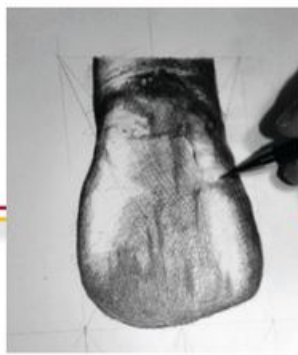


Figure 1: Drawing by student Minju Yi.



Figure 2: Drawing by student Alexander Lee.



Figure 3: Drawing by student Sue Chung.

guidance for progressive wax-up procedures (the three-dimensional [3D] phase of the module). Laboratory exercises in the anterior dentition start with basic wax additions and culminate with smile design techniques and a full "canine-to-canine" wax-up using prefabricated wax patterns. Throughout the process, the use of natural dentition casts and replicas is emphasized to "imprint" on students the fundamentals of tooth form and function.

The last phase of the module includes layering exercises using acrylic resins and mock-ups (Fig 5) and composite resins (Fig 6) (the four-dimensional [4D] phase). During this final step, all the knowledge acquired during the previous phases is brought to fruition.

The so-called "2D-3D-4D" approach is repeated twice, first for the anterior dentition (first trimester), then for posterior teeth (second trimester).²

Another unique feature of the module is the utilization of new high-quality materials for optimal visual perception and hands-on experience, including Type IV white stone, white opaque wax, electric waxes ("wax pencils"), casts of intact natural dentition, silicone molds for prefabricated wax patterns, as well as optimized acrylic and composite resins.

An unexpectedly large number of students from the previous class have been volunteering as teaching assistants to help their freshman classmates. Also, thanks to a significant number of volunteer faculty members (including dental technicians), the student-to-faculty ratio ranges between 5:1 to 8:1 (not counting the numerous teaching assistants). This demonstrates the positive momentum created by this new module.

In closing, I would like to introduce Xue Lily Du, who earned her Bachelor of Science and Master of Science in Physiology and Biochemistry at the University of Western Ontario in London, Ontario, Canada, and was then accepted at the Herman Ostrow School of Dentistry of USC. Lily is very excited to continue in this fulfilling artistic and creative career, where the interactions we have with patients help to improve their confidence and well-being. Her dedication to the profession is evident in her visual essay, which begins on page 28; as well as in her cover art for this issue, which exemplifies her experience in my Dental Morphology, Function and Esthetics course. I hope you enjoy her pictorial journey.

References

1. Magne P. The right start: DMFE class for freshman students at the Ostrow School of Dentistry of USC. In: Duarte S, editor. 2014 QDT. Hanover Park (IL): Quintessence Pub; 2014. p. 7-12.
2. Magne P. Dental Morphology, Function and Esthetics module with the "2D-3D-4D" concept. Int J Esthet Dent. Forthcoming 2015.



Figure 4: Study models by student Alexandre Gaeta.



Figure 5: Wax-up/mock-up in transillumination by student Katie Schwarz.



Figure 6: Composite resin restorations by student Jiwon Kim.

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