

FIG. 1



FIG. 2

5 STEP esthetic contouring technique

Taught at the UCLA Center for Esthetic Dentistry, this course helps dentists and technicians create natural-looking restorations.

By Joe Weisz, CDT

An enormous educational gap exists in the area of esthetic maxillary anterior tooth contouring. The end result is final restorations that are made of the finest state-of-the-art materials but that lack a harmonious, natural appearance in terms of form. By learning this 5-step technique, technicians and dentists can contour a “generic” esthetic, natural-looking maxillary anterior arrangement, and using this as a baseline setup, create an infinite variety of slightly modified versions.

Wax is the medium used for contouring due to its effectiveness and practicality. By using wax, the contouring technique can be adapted to diagnostic wax-ups, pressed-to-cores, and layered ceramics for technicians and to mock-ups and direct composites for dentists. This technique also helps dentists understand the basic components of esthetic anterior tooth contour and communicate with both the patient and the technician.

HONING PERCEPTUAL SKILLS

A ceramist needs to possess well-developed perceptual skills to identify and utilize the common elements found in esthetic, natural teeth as well as to successfully replicate the contours of a diagnostic wax-up or a cast of the patient-accepted provisional. The ultimate goal is to give technicians a methodical contouring procedure that can easily be repeated from case to case to ensure consistent, predictable, and life-like esthetic dental restorations.



JOE WEISZ, CDT

Joe Weisz, CDT, serves as Co-Director of the UCLA Master Dental Ceramist Program along with Dr. Ed McLaren, the Director. He also is on the faculty of the Dental Technology Department at Los Angeles City College and is owner of Esthetic Contour dental studio. For information on the UCLA program contact Mr. Weisz at jweisz@dent.ucla.edu. For information on how to schedule the 5-step, one-day public contouring course at your lab or institute please contact him at joe@estheticcontour.com.

PATHWAY to esthetics

In the course offered at UCLA, each participant is given a cast with a “bulk” wax-up from tooth Nos. 6 to 11. There are five steps to the completed wax-up and each step ends at a checkpoint that must be passed to receive the information on the next step.

An extended, one-semester version of this course is taught by Mr. Weisz within the UCLA Master Dental Ceramist Program, a division of the UCLA Center for Esthetic Dentistry. Both programs are part of a full-time 2-year curriculum devoted to training dental ceramists and dentists to create natural-looking restorations. The condensed, one-day, 5-step public version is taught by Mr. Weisz at dental labs and educational institutes throughout the world.

Prior to learning this technique, every new class of technicians and resident dentists complete a one-week drawing course. “Drawing on the Right Side of the Brain” (www.drawright.com) teaches participants the same perceptual, component skills employed by artists when rendering a photo-realistic 2-D drawing from a 3-D subject. The purpose of the course at UCLA is not to teach creativity or imagination, two traits that are considered innate talents; but rather, to aid the ceramist in acquiring the same perceptual skills used by artists to copy objects and then to adapt these skills to create natural, life-like dental restorations.

Artists perceive 3-D shapes in terms of edges, negative space, angles, proportions, and shadow. These same perceptual skills can be used for contouring anterior teeth. Artists sometimes view 3-D subjects through a window or “picture plane” on a grid. The points or dots from the picture plane are transferred onto the grid of the drawing paper. The dots are then connected, forming the edges of the subject. We, as ceramists, also can imagine viewing teeth through a picture plane (Figs. 1 and 2).

This flattened projection is how an artist would view maxillary anterior teeth in

order to copy them, either into a drawing, a wax-up, or a final dental restoration. We see the edges of teeth as incisal edges and gingival margins. Negative space is the black void of the oral cavity below the incisal edges as well as the incisal embrasures. Angles are found in the line angles on the labial surfaces of the teeth that, as they extend apically past the CEJ, they converge on a point on the root. The distance of convergence points from the CEJ on central incisors are 10-12 mm; on the lateral incisors, 5-7 mm; and on canines, 3-5 mm (Figs. 3 and 4, page 28). Proportions are the width-to-length ratios of each tooth as well as the optical width of each anterior tooth in relation to the other. The optical width of an anterior tooth is the visible width as seen from viewing the midline. The optical width of the lateral incisors are two-thirds the optical width of the central incisors. The optical widths of the canines are three-quarters the optical width of the lateral incisors. Shadows are seen as the darker mesial and distal walls of the teeth within the labial embrasures. Some shadow also is caused by the texture of teeth.

HONING THE PRACTICAL

Typically, during a hands-on course par-

STEP 1

Proportion the six anterior teeth for their correct optical widths.

STEP 2

Establish the correct position of the lateral incisors (Figs. A and B).

STEP 3

Locate and define the line angles of each tooth. Locate the gingival zeniths (Fig. C).

STEP 4

Create the “three-plane” effect to define the convexity of the labial surfaces (Figs. D and E). This step completes the foundation-level or “baseline” wax-up.

STEP 5

Add “personality” (characterization) to tooth Nos. 6-8 to appear “masculine” with heavy texture and to Nos. 9-11 to appear “feminine” with little texture (Fig. F). Add subtle asymmetry.



FIG. A



FIG. B



FIG. C



FIG. D



FIG. E



FIG. F

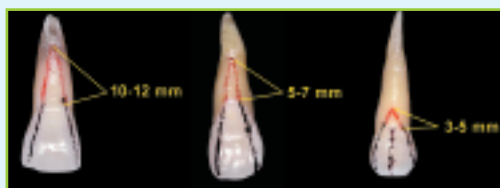


FIG 3

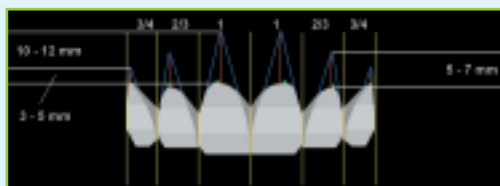


FIG. 4



FIG. 5

“There is continual one-on-one **INTERACTION** between instructor and participant.”

ticipants passively watch a demonstration for a lengthy period of time and then return to their benches and attempt to reproduce the techniques performed by the instructor. However, much of the visual information from the demonstration is lost, particularly when it is seen for the first time. This can create a frustrating experience for the student, especially if the participant isn't given the proper amount of time to even finish the project.

Both versions of the course utilize a synchronized watch-and-copy format. Using a video projector system, all participants can watch the instructor and simultaneously do hands-on work at their benches. This greatly enhances the effectiveness of the step-by-step “cookbook” approach. The visual information captured by the observer is quickly put into use and everyone completes the project. Also, there is continual one-on-one interaction between the instructor and each course participant whereby their work-in-progress is evaluated under the video camera and critiqued either on a laptop, plasma screen, or a projection. This view is our picture plane. By evaluating a flat, 2-D image, both the instructor and the student can see the contours from precisely the same viewpoint. The effect of depth-of-field created

when merely holding the wax-up and passing it between the instructor and the student, is eliminated. Errors in contour are far more apparent when viewed as a flattened image.

The instructor checks each step within the technique before a student receives information on how to proceed to the next step. Course participants work at their own pace. Typically all the students agree to have their work critiqued in front of everyone else, making the learning experience a communal effort and dramatically increasing the effectiveness of reinforcing the newly acquired concepts and skills. Experience has shown that many contouring mistakes are commonly shared by everyone.

If a ceramist or dentist can perceive the contours of esthetic dentition with the same distinct and learned component skills that artists use, then he or she can identify and replicate these forms in the restoration. A ceramist must first learn how to shape the final contours of anterior teeth before learning where to position and layer the various powders that go into a set of four to six anterior ceramic restorations (Fig. 5). The dentist must know exactly where to apply and how to layer composite. **lab**

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