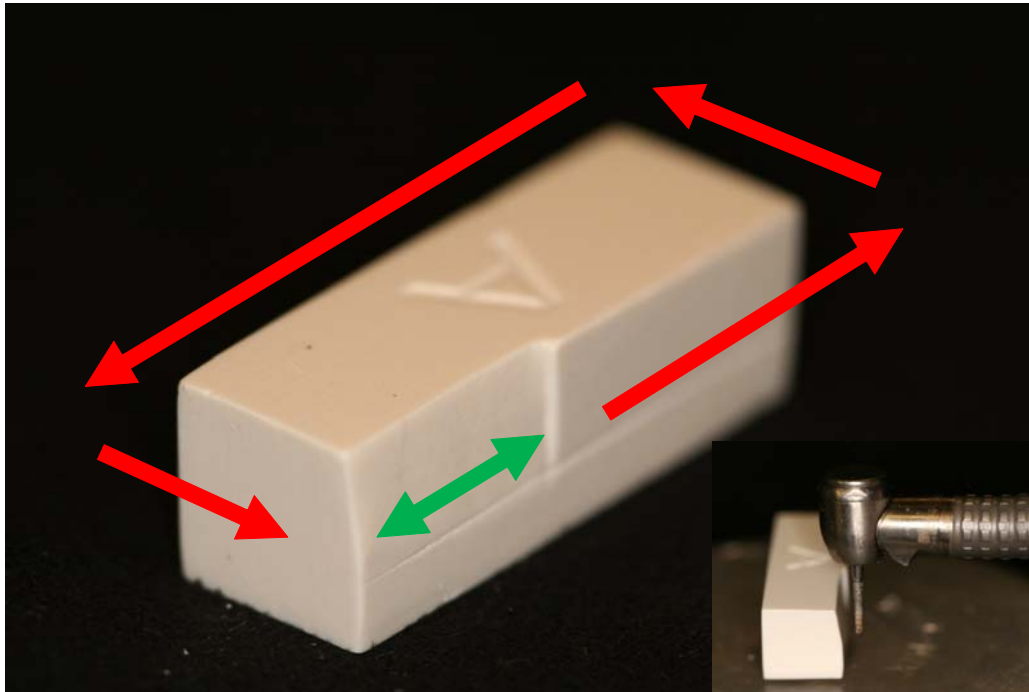


FULL CROWN TRAINING BLOCKS INSTRUCTIONS

Psychomotor Skills Training for Dental Students

By Ranier M. Adarve, DMD, MS, MHPE



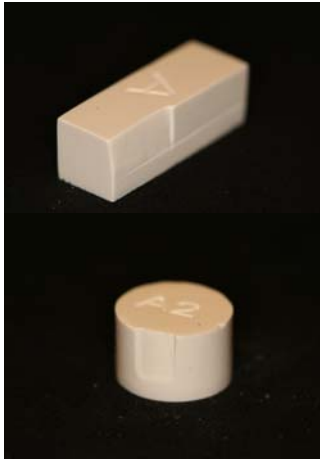
Full Crown Training Blocks

A system of highly targeted training method designed for dental students who are learning tooth preparation skills for full crown restoration. The system deconstructs the complex skills of tooth preparation into smaller and isolated micro skills. Each micro skill is represented in a Training Block which will be used to learn and practice preparation (reduction) skills. This system allows the learner to deal with a particular micro skill one at a time. Thus, making the learner highly engaged and highly focused in their skill development.

Each Training Block has specific design and form that needs to be followed and imitated using high speed handpiece and bur. *The goal is to go through each training block as accurately as possible and minimizing visible errors.* Learner needs to prepare all the blocks from A to G to complete the practice and training.

Rationale of the Training Blocks

Once all the blocks are completed in a satisfactory accurate level, the learner can now re-construct the complex skill of tooth preparation by combining each of the micro skills together in actual tooth preparation procedure.



Block A and A2 - TAPER

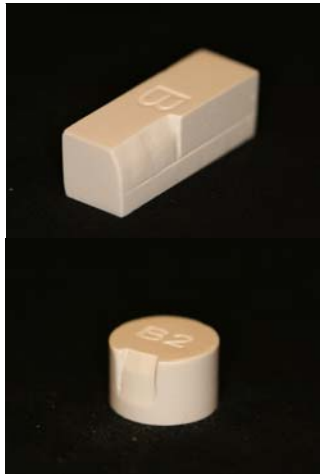
Description: It is the convergence of two opposing external walls. Each wall should have 5 degrees of incline. The angle of convergence is 10 degrees.

Instruction: Using block A and A2, form a 5 degree incline all around. Use Feedback tool A to measure the 5 degree incline.

Bur: Tapered Diamond Bur*

Application in Tooth Preparation: Ideal tooth preparation should have 3 degree incline of the axial wall.

*or use bur base on Instructor's Preference



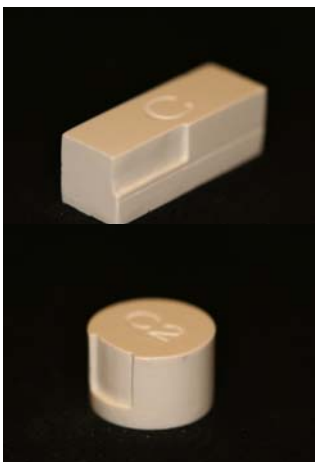
Block B and B2 – BI-PLANE

Description: It is a shape formed by 2 planes

Instruction: Using block B and B2, form 2 planes. Use Feedback tool B to measure the accuracy of the planes created.

Bur: Tapered Diamond Bur*

Application in Tooth Preparation: Several buccal and facial surfaces of teeth require 2 plane reduction of the surface to follow the pre operative contour of the teeth.



Block C and C2 – SHOULDER

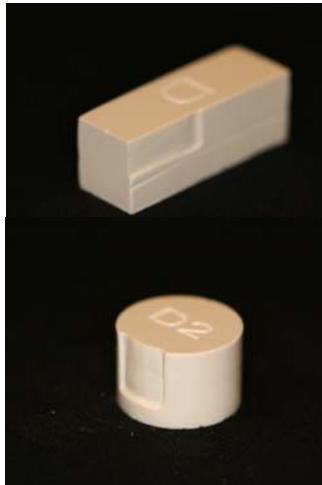
Description: It is a type of finish line where 2 planes meet at right angle.

Instruction: Using block C and C2, create a shoulder margin. Use Feedback tool C to measure the accuracy of the shoulder margin.

Bur: Shoulder Diamond Bur*

Application in Tooth Preparation: Shoulder margin is a type of finish line where gingival floor meets the external axial surface at approximately right angle. Generally used for preparing buccal finish line of a tooth to receive Porcelain Fused to Metal (PFM) restoration. Also used in All Ceramic restoration.

The Full Crown Training Blocks



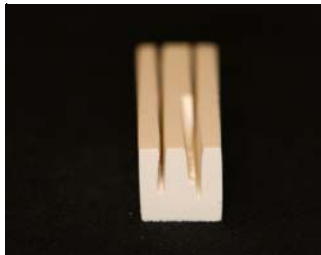
Block D and D2 – CHAMFER

Description: It is a type of finish line where 2 planes meet at a curve.

Instruction: Using block D and D2, create a chamfer margin. Use Feedback tool D to measure the accuracy of the shoulder margin.

Bur: Chamfer Diamond Bur*

Application in Tooth Preparation: Chamfer margin is a type of finish line where gingival floor meets the external axial surface at a curve. Generally used for preparing lingual finish line of a tooth to receive Porcelain Fused to Metal (PFM) restoration. Also used as a finish line for Full Gold Crown (FGC).



Block E – PROXIMAL CONTACT

Description: Cutting through the contact of adjoining surfaces.

Instruction: Using block, cut through the block to create a margin and to cut through it without damaging the adjacent surface. Use visual to determine if the adjacent structure has been marred or damaged.

Bur: Straight Diamond Bur (smaller diameter)*

Application in Tooth Preparation: Chamfer margin is a type of finish line where gingival floor meets the external axial surface at a curve. Generally used for preparing lingual finish line of a tooth to receive Porcelain Fused to Metal (PFM) restoration. Also used as a finish line for Full Gold Crown (FGC).



Block F – PLANAR REDUCTION

Description: Shaping the top surface in an incline and as one plane.

Instruction: Using block E, reduce the top surface of the block to create an inclined plane. Use Feedback tool F to measure the accuracy of the planar reduction.

Bur: Tapered or Straight Diamond Bur*

Application in Tooth Preparation: Planar reduction is used to prepare the occlusal surface of the tooth. Reduction follows the inclines of the cuspal planes.

Application in Tooth Preparation: Ideal tooth preparation should have 3 degree incline of the axial wall.



Block G – BEVEL

Description: It is the creation of a slanting edge.

Instruction: Using block G, create a slanting edge on the top corners of the block. The right corner will have .75mm bevel and the left corner will have 1.5mm bevel. Use Feedback tool G to measure the accuracy of the bevel.

Bur: Tapered or Straight Diamond Bur*

Application in Tooth Preparation: Bevel is the process of slanting the finish line and curve a tooth preparation. Functional Cusp Bevel is 1.5mm and non functional cusp bevel is .75mm

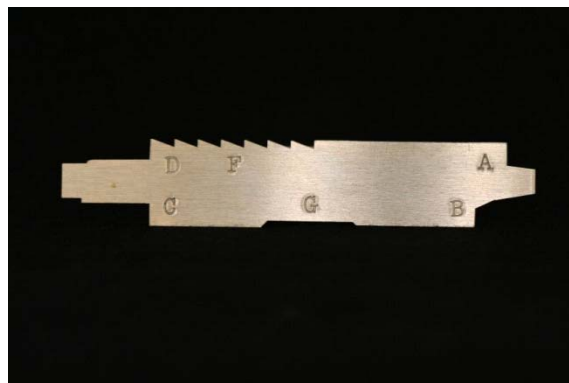
Tools and Materials

Each of this micro skill is learned and practiced individually using the:

- a. Training Blocks
- b. Mouth Mirror
- c. Feedback Tool



Mouth Mirror



Feedback Tool

Instructions in Using the Full Crown Training Blocks

1. Spend exactly 30 minutes at a time as you work through the blocks. Not more and not less. This is to train you to engage in a highly focused time frame.
2. Allow frequent practice. Preferably, every other day until you complete all the training blocks. You will be provided with a **Training Log Sheet** to document the time spent and progress.
3. For each block, perform the micro skill required:
 - a. On a bench top, set the block on top of a stable platform (use mixing bowl or any alternative that is flat and elevated)
 - b. Use a small piece of rope wax to stabilize the block on the platform (Fig. 1)
 - c. One side of the block should be accomplished using direct view (Fig. 2)
 - d. The other side of the block should be accomplished using indirect view (Fig. 3 and 4)
 - e. Rear and front side of the block should be accomplished with only the mental image of the micro skill. Meaning, it should be done without looking at the block (Fig. 5 and 6)
 - f. Use the corresponding feedback tool as often as you can to measure the accuracy of your practice (Fig. 7)

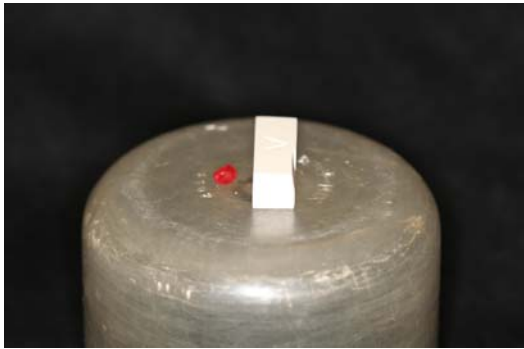


Fig. 1 Use sticky wax to stabilize the block on the platform



Fig. 2 Right side of the Training Block should be done using direct view

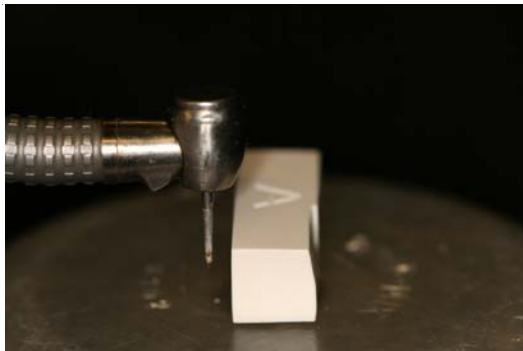


Fig. 3 Left Side of the Training Block should be done using indirect view

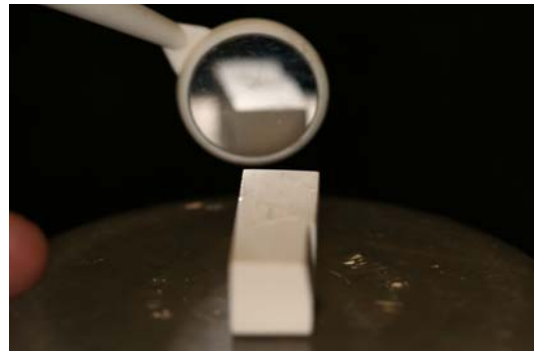


Fig. 4 Indirect View (reflection From the mirror)

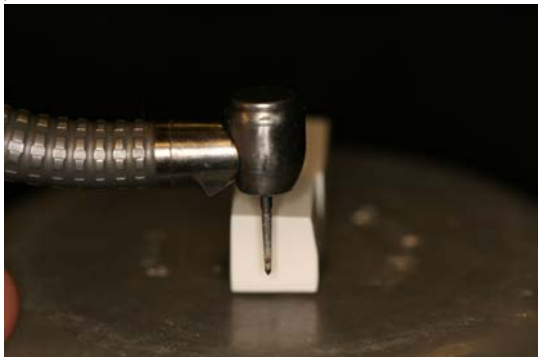


Fig. 5 Front Side of the Training Block should be done using mental imagery

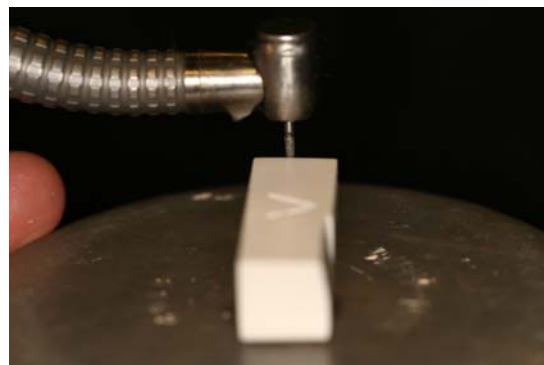
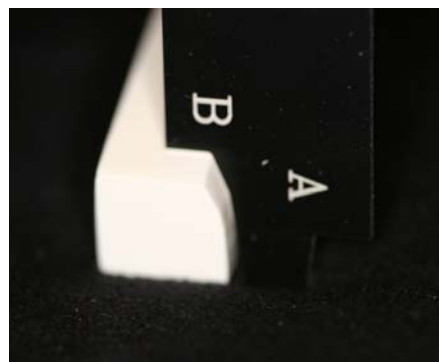


Fig. 6 Rear Side of the Training Block should be done using mental imagery

Fig. 7 Measuring performance with the feedback tool



Training Log Sheet

A Training Log Sheet is use to document the number of 30-minute training sessions. Include the training dates. At the end of the block exercise, evaluate the number of visible errors and inaccuracies (see Appendix A). Provide a narrative of self evaluation and description of performance. Faculty will fill up the log and will provide feedback. See Example below.

BLOCK A AND A2	# OF 30 MINUTE SESSIONS	DATES	
	1111	1/13, 1/15, 1/17, 1/19	
	TOTAL # OF 30 MINUTE SESSIONS	DATE OF COMPLETION	# OF VISIBLE ERRORS / INACCURACIES
	4	1/19	7
SELF EVALUATION / NARRATIVE DESCRIPTION OF PERFORMANCE			
<p>I am having difficulty in indirect view. I don't know how to hold my handpiece correctly. Most of my errors are over tapering. I can improve further by orienting bur angulations at correct position.</p>			
FACULTY EVALUATION			
# OF VISIBLE ERRORS / INACCURACIES	10		
COMMENTS	<p>Most of the errors are over taper. Need to go slower. Need to pay attention to every detail. Use feedback tool more often. Need more practice</p>		
FACULTY SIGNATURE	Dr. Adarve	DATE	1/21

Instructional Developer:

Ranier M. Adarve, DMD,MS, MHPE

Director, Pre Clinical Fixed Prosthodontic Program

School of Dentistry

University of Minnesota

email: adar0002@umn.edu

office: (612) 625-5547

TRAINING LOG SHEET

BLOCK _____	# OF 30 MINUTE SESSIONS	DATES	
	TOTAL # OF 30 MINUTE SESSIONS	DATE OF COMPLETION	# OF VISIBLE ERRORS / INACCURACIES
SELF EVALUATION / NARRATIVE DESCRIPTION OF PERFORMANCE			
FACULTY EVALUATION			
# OF VISIBLE ERRORS / INACCURACIES			
COMMENTS			
FACULTY SIGNATURE		DATE	

BLOCK _____	# OF 30 MINUTE SESSIONS	DATES	
	TOTAL # OF 30 MINUTE SESSIONS	DATE OF COMPLETION	# OF VISIBLE ERRORS / INACCURACIES
SELF EVALUATION / NARRATIVE DESCRIPTION OF PERFORMANCE			
FACULTY EVALUATION			
# OF VISIBLE ERRORS / INACCURACIES			
COMMENTS			
FACULTY SIGNATURE		DATE	