

Practice Planning Consistent With Motor Learning Principles

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Why is this Important?

- Because this is how athletes learn
- The better we are at creating the right environment, the more rewarding, challenging, and fulfilling it is for all of us.
- It's up to us to blaze the proper trail. It's not easy.

What are the consequences?

- Coaching is hard and frustrating enough without attempting to follow motor learning principles and the laws of learning. Let's at least stay in the right forest.

What are the benefits?

- If the athlete feels he/she is learning and improving, they will be engaged. Following these principles allows that to reach a maximum level
- You'll find the activities tend to be more enjoyable because they actually replicate the game.

Key Items to Consider

- The most important variable for success is game like repetitions
- The most important factor in an athlete's development is deliberate practice
 - They have to want to. That's the rub
- How can I make this as game like as possible?
- What does my feedback have to be like?
 - o Intermittent
 - o Lead them vs. Command them
 - o Brief visual cues over and over
 - o One thing at a time
- What's the learner's pace?
 - o Where are they at in relation to what makes the drill hard?

A Progression

- Get them going.
 - o Let them warm-up playing volleyball
 - o Lots of opportunities to respond
- Tutor a task
- Test the task
 - o Take the score out of it.
 - o Measure the task. Process over uncontrollable outcomes.

- Compete on what you need to work on
- Play a game (The real test)

Practice Planning Consistent With Motor Learning Principles

As coaches, there is a skill set we are attempting to master in order to do our jobs well that is perhaps as difficult and as broad as any occupation out there. The science of what we do, of how teams and athletes learn, is certainly a major part of this coaching discipline, and just one more reason why what we do is so difficult, but so rewarding.

In writing this, I in no way claim to be a PhD. Just the opposite, I'm like many other coaches I know; a former player who discovered a love for teaching in this wonderful sport, and read every article I could get my hands on. Through working with Carl McGown (who actually does have a PhD in this stuff), Ron Larsen (USA MNT Asst. Coach), Marv Dunpy (Head Men's Coach, Pepperdine) and talking with and reading the articles of Dr. Richard Schmidt (Founder of the Human Performance Institute and creator of the "Schema Theory" a major Motor Learning work) I feel at UCSD we've been able to come closer and closer to designing practices that are consistent with the way athletes learn and develop. We for sure haven't gotten all the way there, and we are well aware there are areas to get better, but for now, here is our best effort to explain and demonstrate how we keep our practices consistent with both the laws of learning and motor learning principles.

Why Is This Important?

The simplest reason I can give is because whether we like it or not, there is a science to what we do and how people learn. We often ignore this as coaches. I know I spent many years trying to make athletes fit into "my" system of how I thought they should learn, before changing my mindset and trying to find the objective truth of the matter.

As I dove in to learning more about motor learning, and the laws of learning, and holding my practice plans accountable to these principles, I had an amazing discovery. The better I got at doing this on a day-to-day basis, the better the gym culture got. I believe players are motivated when they feel a real learning and improvement occurring. This is where the role of the coach is arguably most important, and most agonizing. Following these laws and principles has helped

us to get closer and closer to this stimulating day-to-day environment where the athlete feels he or she is able to make real changes and get 2% better everyday.

What are the Consequences?

If we are going to disregard these motor learning principles, then the most immediate consequence is spending time on activities that have little to no transfer to the actual matches. This was a painful realization for me at first, but as I committed to learning as much as I could about motor learning (and I'm still learning, just like all of us) I quickly changed my mindset to simply getting better as a coach.

The second answer is, as Stephen Covey asserts, we need to spend our time in the right forest. As Dr. McGown points out on day one minute one of a Gold Medal Squared Clinic, many coaches base their gym cultures and methods upon anecdotal information and observations of coaches' they respect. This is logical, and I do the same. The caveat is, the principles of motor learning remain unmoved whether we follow them or not. We could fall in love with a coach and attempt to emulate them, but if they are engaged in blocked practice (which Dr. Schmidt advises to avoid like the plague) then the only activity that's providing the athlete with a real opportunity to get better is most likely the 6-on-6 game play sometimes not done until the last half-hour of practice.

Coaching is a great profession. We know the rewards and the meaning behind our work. But because it can be such a great job, we also know it can be supremely challenging and agonizing. Because this job is so difficult, and our athletes are so important to us, we need to spend our practice time in the right forest, and I believe these motor learning principles are that place.

Key Concepts

Whole v. Part Practice: No matter what skill we are teaching, they have to be doing the entire movement. We need to teach at the pace of the learner, but they have to do the entire skill. Having players only do part of a spiking motion, or part of a defensive motion, will result in minimal improvement, and in only the specific motion that was just practiced. Practicing only a part of a spiking motion, and then asking an athlete to somehow process that into the entire

motion, within all the variables that occur during a game, is nearly impossible and contrary to how we really learn. Doing the whole skill all the time, and then making the practice variables increasingly game-like, allows real transfer to continually build.

Random v. Blocked Practice: "How can I teach this skill and make it as game-like as possible?" When an activity is blocked, we have fixed certain aspects of the drill (i.e.-Sending the ball in from the same spot in the same way.) and removed the necessity of the player to "read the play." When we attempt to simulate the randomness of the game (i.e.-Moving to different spots of the court to toss instead of only area 6) we have forced the athlete to process different situations while performing the same skill. This game-like "randomness" enhances the athlete's learning and improves the rate of transfer from practice to game, which I think is our primary goal with all our practice activities.

There is a major aspect of learning I believe to be counter-intuitive. Much like read blocking, where we are telling a blocker "Hey, I know you see all this motion. There's a pass going that way, and a middle-blocker running this way, but I don't want you to pay attention to any of it. I want you to stand still and look at the setter," we are doing the same thing with our practice activities. As Dr. Schmidt explains, the more we control the activity, the less it will transfer. The more random the activity, the higher the transfer. This is incredibly hard for coaches' to accept, because to our naked eye, it simply doesn't make sense. We can stand on a box, artificially control all the variables of the game, and actually "see" the athlete improve her armswing, blocking motion, defensive move, etc. The problem is, since we took all the reading elements of the game away, all that improvement we believe we saw was in reality negligible. If we had made the activity more game-like, or random, it would have been messier, and the improvement we "saw" would have been less and much slower, but it would have also been more real.

Feedback: We all have areas we need to improve. There's a process for us just like our athletes. An issue I have struggled with is feedback, especially in small group settings. I was noticing a tendency to hound players after every play. I believed it was my job to get them as good as possible, and I couldn't do that unless they knew what they did and what they needed to change. While I still believe this is a big part of my job, some conversations with Pepperdine Coach Marv Dunphy, as well as Dr. Schmidt, helped provide me with a better measuring stick.

Marv told me over a phone conversation that he read once to "lead rather than command." Dr. Schmidt also confirmed that if I ask an athlete what they just felt

or did, and they can answer correctly, that's a much better means of learning than me simply telling them.

Dr. Schmidt advised me to think of feedback as a guide. Too much is like a crutch. The athlete will be so used to relying on my instruction they won't feel as if they can go into a match and play on their own. Too little is like trying to find a new location without a map. Like a tour-guide, leading our athletes to a new place, we have to bring them along at the right pace and the right speed.

Much like random v. blocked practice, we also know the higher the rate of feedback, the less the rate of transfer, because the athlete has relied on us for information rather than processing on their own. A rule of thumb we attempt to use, based on conversations and articles from Dr. Schmidt, is a 1-5 activity to feedback ratio when we are in small groups, and constant feedback in 6-on-6 game play. Since there are so many players to attend to in regular game play, the 1-5 ratio takes care of itself.

A Template

Having wrestled, and continuing to wrestle, with these laws and principles everyday, we currently have a basic structure we like a lot.

Get Them Going: We like our first activity to be a high rep, game-like drill. This gets them locked in, provides lots of opportunities to respond, and allows us to begin by playing volleyball. Something we all love to do.

Tutor a Task: We have a task for the day listed on our white board for different positions, and we'll tutor that task in a small group setting. Even though the group is smaller, we attempt to make it as random and game-like as possible.

Test the Task: We play 6-on-6, remove the scoreboard, and instead measure the task we just tutored. If we can do it in this volleyball game we're playing, we're getting very close to really being able to do it.

Compete with a focus: We'll play lots of game-like drills with an emphasis on whatever we need to work on.

Practice Competing: If we want to compete well in a match, then we need to practice that just like we practice the movements of the game. We play a straight match, target certain behaviors we believe are critical to competing well, and measure ourselves on those behaviors.

The Process is what Matters

Motor learning, and the laws of learning, is all about the process. There is so little about a season we can actually control, but we have absolute control over the activities of our gym. I think, as we understand the reasons behind what we do, our anxiety over the uncontrollable can decrease. We can have some peace of mind knowing we've done everything within our power to get ready.

At a Gold Medal Squared Clinic recently I watched Marv skip his lunch to teach a completely new coach who had flown all the way in from New Zealand how rotations worked. This coach, without any previous knowledge of volleyball, was determined to master as many of the concepts of volleyball as she could in order to give her kids a great experience.

On the last day, we could all tell she had learned a great deal, but still doubted herself. She took her job seriously and didn't want to let her kids down. When she came up to thank Marv, he gave her a quick piece of advice:

"Just remember when you're feeling a little overwhelmed, there's no volleyball god who out there who has it all figured out. You'll be fine."

I remind myself of this as I agonize over the same process. But, I believe it's in this process we make our real gains, and these principles help keep us there.