Coaching volleyball is enhanced when coaches draw from a variety of disciplines to aid in the teaching of skill development. In the last issue of Coaching Volleyball the following five motor learning principles related to teaching volleyball skills were discussed:

Principle #1 – The Practice Conditions Should Be Like the Game
Principle #2 – The Practice Conditions Should Provide For Variability
Principle #3 – Learning Occurs in Three Distinct Stages
Principle #4 – Consider Transfer of Learning When Teaching New Motor Skills
Principle #5 – Focus Attention on the Movement Effects Rather Than Just the Movement

This is the second part of the series, summarizing five additional principles from motor learning research and making application for coaching volleyball. Using these principles will allow players to reach their full potential in learning and developing volleyball skills which will lead to more effective performance on the court.

#6 – Feedback is Essential for Skill Learning

Perhaps there is no more conclusive evidence in motor learning literature than the effectiveness of feedback to enhance skill acquisition. In addition to task intrinsic feedback, which is provided through the senses of the learner, augmented feedback provides additional information helping the learner acquire the desired skill performance. A coach providing appropriate augmented feedback to the player regarding the performance of a skill is very helpful. Augmented feedback may come in different forms such as a coach providing verbal feedback. For example, when the coach remarks, “You served 8 of 10 balls in-bounds in zone three,” this type of augmented feedback is called knowledge of results. While KR is often redundant with task intrinsic feedback, it may be needed when task intrinsic is not available or is unclear. Another type of verbal feedback is knowledge of performance. KP is when information is given regarding the specific characteristics of the performance. For example, a coach using KP informs the hitter that she dropped her elbow prior to the spike. This type of verbal feedback is descriptive knowledge of performance, as the feedback “describes” the act, and is recommended for more advanced players. For beginners, prescriptive KP is more effective such as telling a beginner to keep their elbow high when spiking. Besides verbal feedback, other examples of using augmented feedback include video tape recordings and movement kinematics such as the Dartfish software program.

#7 – More Is Not Always Better

While feedback is extremely beneficial in skill acquisition, more is not necessarily better. In fact, asking learners to rate their own performance before providing augmented feedback may actually enhance the feedback’s effectiveness and help players not become so dependent on the coach providing all the feedback. There are numerous ways to decrease the amount of feedback provided, helping players become independent learners. For example, having players perform several attempts of a skill before providing augmented feedback (called summary feedback) can allow them to engage in a cognitive/kinesthetic skill analysis before hearing from the coach. A method called self-selected feedback suggests players only receive feedback from the coach, when the players request feedback. Another approach of providing less rather than more feedback is termed “bandwidth feedback” which entails establishing an acceptable range or criterion of performance error, and only providing feedback once the player is outside that range. These approaches for reducing feedback delivery are helpful for coaches and players since it is a systematic reduction of feedback based on individual skill levels. So while feedback is essential for skill learning, more is not always better.
Principle #8 – Consider Organization and Complexity When Practicing the Whole Skill or Part of the Skill

Perhaps no other motor learning topic is debated as much as the whole/part practice question. When practicing a volleyball skill, which is type more effective? To practice the entire skill or to practice parts of the skill? One way for volleyball coaches to solve this dilemma is to conduct a skill analysis for each of the six volleyball skills (serving, passing, setting, hitting, blocking, and digging) and determine the complexity and the organization of each skill. The complexity of the skill consists of the number of parts or components while the organization of the skill involves the relationship among the various parts. If a skill is highly organized, it means that one part is dependent on the previous components. After doing the skill’s task analysis, the general principle is if the skill is high in complexity and low in organization then the part method is better. For example, serving in volleyball would involve several components or parts to the skill, but these parts are not interdependent to one another, so the part method would be more appropriate. However, when a skill is low in complexity and high in organization practicing the whole skill is more appropriate. For example, spiking in volleyball involves parts that are highly dependent on one another. The approach, jump and arm swing all work interdependently in order for the entire skill to be successful, thus the whole method is more appropriate, and this is especially true when working with beginners. The whole/part debate will continue among volleyball coaches, but determining the complexity and organization of the various skills may provide some guidance regarding which practice approach is better to use during practice skill instruction.

Principle #9- Practices Should Be Short and Frequent

This principle relates to mass verses distributed practice schedules. A mass practice schedule will have fewer practice sessions than a distributed schedule and will be fewer in number, while a distributed practice schedule will have the same amount of time allotted, but across more sessions making the sessions shorter in length. For the majority of volleyball coaches, decisions regarding the amount of practice time may or may not be within their control, but how long each practice is, and how often the team should practice are legitimate concerns that need to be addressed. The motor learning research suggests that practices can be too long and not as productive as shorter practices, so when in doubt, go for a shorter practice session, rather than a longer one. If more practice is needed, add additional practice sessions instead of lengthening the specific practice schedule.

Principle #10- If You Want To Get Better at Playing Volleyball, Play the Game of Volleyball

The final motor learning principle for coaches to remember repeats the first tenant presented at beginning of this series. Since repetition aids learning, this critical principle needs repeating; practice like the game. The best practices increase skill learning that can be transferred to the real game setting. During practice, if coaches increase time on game-related skills and increase opportunities to learn the skills in the context of the game, players will get better at playing the game of volleyball. Remember when volleyball coaches had players passing, setting or spiking against the wall during practices. The question no one asked was “how often during the volleyball game will passing, setting, or spiking against the wall be necessary”? Many of our practice drills do not simulate the game conditions. It has been stated that the best passing drill is a pass/set/hit drill; the best setting drill is a pass/set/hit drill; and the best hitting drill is a pass/set/hit drill. In other words, if you want to get better at playing the game, then play the game. For volleyball coaches this means designing drills to simulate the same skills needed in the game. If it isn’t game like, don’t do it. Always be analyzing practices, changing drills, and incorporating mini games, wash drills and controlled scrimmages, so that practice looks like the game of volleyball. If you want your players to get better at playing volleyball, then let them play volleyball.

Effective volleyball coaches work hard to enhance the performance of their players. Information from various disciplines such as motor learning can help assist them with this process. This article looked at five additional principles from motor learning literature along with applications for teaching/coaching volleyball skills. Although certainly not exhaustive of all motor learning concepts, these principles do provide a solid pedagogical foundation for coaches developing successful players and effective teams.