

OPTIMIZING MEANINGFUL TOUCHES IN VOLLEYBALL PRACTICES

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Introduction

It is fascinating to watch the way junior athletes learn to play their sports. To better understand the process, I have participated in coaching conferences, talked with coaches and players in various sports, and watched countless youth practices to see what coaches do right and wrong.

I have found that most coaches are knowledgeable about their sports and passionate about working with the athletes. Unfortunately, most lack the skills to manage their team practices in an efficient manner. Too often the primary skills that young athletes are taught is to stand in line and be polite to a coach who talks too much. The kids who don't quit will eventually improve despite the coach. Too often the kids don't get a chance to experience the joys of reaching their potential.

Several years ago, I charted a city recreation tennis practice to see how many times the 10-year olds hit the ball in the 90+ degree weather. On average, they hit the ball 33 times during the 45 minute session. As can be seen in the picture below, the junior players were bored out of their minds and not engaged in the lesson.



Over the years, my experience watching club volleyball practices has been similar to this tennis experience. The results from charting 5 practice sessions showed that most volleyball coaches don't engage their athletes in their practices. The players don't get to hit the ball often enough!

I have documented my findings in hopes that coaches and club programs will evaluate the efficiency of their coaches. This is important!

There is no greater joy for kids than learning a new skill or taking their game to the next level. It is impossible for that to happen if they don't have a chance to get a sufficient number of meaningful touches in practice.

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PURPOSE, METHODOLOGY/LIMITATIONS, DEFINITION OF TERMS

Purpose

The purpose of this mini-study is to provide a review of five volleyball practice sessions (7.5 hours) to understand how time is allocated to different activities during practice and the number of meaningful touches. By design, coaches are not identified because the intent is to focus on the process, not the people.

By design, this mini-study focuses primarily on the optimization of meaningful touches. It is recognized that there are many criteria for determining the effectiveness of a coach and that a coach should not be judged only by the number of touches in his/her practices.

This mini-study will affirm to some coaches that they have efficient practices. Hopefully it will also suggest to other coaches that they can improve their instruction by making their practices more efficient.

Methodology/Limitations

Five practice sessions were randomly selected in the northern Denver metro area during the period December 2013 to February 2014. The players played at different levels for local clubs and they ranged from 11 to 16 years old.

The practices were charted by activity and the time allocated to each activity. Only meaningful touches were counted. For example, warm-up touches such as throwing and catching, hitting against the wall, or playing pepper were counted as warm-up time. Additional explanations are provided in the Definition of Terms section.

In most cases, it was easy to count the number of balls hit because the coaches usually had one ball in play. When multiple balls were put in play, samples were taken for the different pairs/groups and extrapolated to the other groups to estimate a total count.

For this to be a scientific study, it would be necessary to evaluate at least 25-30 practices from a broader sample. As well, a more accurate count of meaningful touches and time spent on each activity could be collected by videoing the practices. Time measurements and total counts could be more accurately collected from an analysis of these videos.

Despite the limitations of this mini-study, it has value in educating coaches about how efficiently, or inefficiently, practices are managed. This is not intended to be an

authoritative document about how practices should be managed. Additional research is needed before such a document could be produced. In absence of such a document, coaches are encouraged to conduct a self-evaluation of their practices as a tool for improving the quality of their instructional programs.

Definition of Terms

The following terms are used in the review of the data:

- *Activity* - The activities during a practice include discussions, instruction, drill explanations, point simulations or walk-throughs, drills, scrimmages or competition, conditioning, time to help injured players, court setup, and warm-ups or cool down.
- *Group Touches per Minute (Touch Time)* - GTM (TT) is the number of touches divided by the time spent on that activity. Total GTM (TT) includes the total number of touches for the entire session divided by the total number of minutes for activities where touches occurred.
- *Group Touches per Minute* - GTM is the number of touches divided by the time spent on that activity. Total GTM is the total number of touches for the entire session divided by the total number of minutes for the practice. Total GTM includes all activities, including those where touches did not occur.
- *Meaningful Touches* - Touches are counted for drills that emphasize skills that transfer to playing the sport. Warm-up drills such as catching and tossing or paired passing are not counted as touches. Coach touches or feeds are not included as touches, nor are tossed feeds by players.
- *Player Touches per Minute* - PTM is the GTM divided by the number of players participating in that drill.
- *Player Touches per Minute - Touch Time* - PTM (TT) is the GTM (TT) divided by the number of players participating in that drill.
- *Time* - Time was recorded to nearest minute for each activity.
- *Total Touches* - Total touches include all meaningful touches by all team members during the instruction period.
- *Touch Time* - The time spent in activities when the drills include meaningful touches. For example, discussions and conditioning are not considered Touch Time.

SUMMARY OF TOUCHES BY SKILLS EMPHASIZED IN DRILLS

There were 33 drills featured in the 5 instructional sessions evaluated. These drills have been classified into one of 5 categories based on their primary focus: *hitting, passing, serve/receive, positioning, and play.*

Hitting Drills

Four of the 5 lesson sessions spent time on hitting. The range of time for the 12 hitting drills was 4 to 18 minutes, although 7 of drills were between 7 and 12 minutes. The player touches per minute ranged from 1.3 to 7.5. The top 6 drills in terms of touches per minute came from the Hitting Clinic. (The breakdowns of drills for the Hitting Clinic and other instructional sessions are available in the next section of this document.)

The coach of this session has coached teams that have had solid finishes at the USAV National Junior Championships. This coach places a premium on engagement

While all drills have value, the players had fewer than 2.5 touches per minute in 27 of the 33 drills. The coaches should consider finding alternatives for these 27 drills.

in the drills and a high number of meaningful touches. This is accomplished by having multiple balls in play, playing on a half court, and keeping score.

It should be noted that hitting lines and variations of hitting lines were ranked near the bottom in terms of player touches per minute.



Hitting

Minutes	Session	Total Touches	Group Touches per Minute - Total	Player Touches per Minute	Activity
8	Hitting Clinic	360	45.0	7.5	Control hit around block game (2 groups/half court)
5	Hitting Clinic	172	34.4	5.7	Control hit around block drill (2 groups/half court)
8	Hitting Clinic	217	27.1	4.5	2-shot hit game - 2nd ball must be a hit (2 groups/half court)
7	Hitting Clinic	132	18.9	3.1	4-on-4 cross court, focus on strong side hitting
5	Hitting Clinic	75	15.0	2.5	4-spike rapid fire - Hit four spikes transition
12	Hitting Clinic	160	13.3	2.2	Self-set hitting (CC, line, cut, roll, hit off block)
8	Skills/Transition	153	19.1	2.1	Hitting lines (2)
4	Skills/Transition	74	18.5	2.1	Coach toss to setter then hit
10	Hitting Clinic	123	12.3	2.1	Pass, set, hit game
18	Practice 57	252	14.0	1.6	Coach toss set and hit 2 lines
5	Skills/Transition	60	12.0	1.3	Coach toss to setter then hit
11	Practice 67	99	9.0	1.3	One hitting line

Passing Drills

Four of the 5 lesson sessions had drills that focused on passing. The range of time for the 7 passing drills was 6 to 17 minutes, although 5 of the drills were between 5 and 8 minutes.

The player touches per minute ranged from 1.2 to 2.4. Popular passing drills such as the pole weave, 7-ball run drill, and circle passing drill produced a low number of player touches per minute. Not all of the skills used in these drills transfer to match play.

All drills had fewer than 2.5 touches per minute. The number of touches per minute can be increased by using multiple balls in practice sessions, having players start the feed, or incorporating multiple skills in a drill.

As well, alternate drills should be considered to increase the number of meaningful touches.

**Passing**

Minutes	Session	Total Touches	Group Touches per Minute - Total	Player Touches per Minute	Activity
5	Practice 67	85	17.0	2.4	Pole weave, one player hitting ball at a time-shallow
17	Practice 90	308	18.1	2.3	Coach fed, back row pass to setter - two hits
6	Practice 67	94	15.7	2.2	Pole weave, one player hitting ball at a time-deeper
8	Skills/Transition	101	12.6	1.6	Coach (2) feed, back row pass to setter/coach, set to players/warm-up
8	Practice 90	98	12.3	1.5	7 ball run to a different position coach fed
8	Practice 57	88	11.0	1.2	Get in a circle, person in middle passes
11	Practice 57	79	7.2	1.2	Coach toss to back row play points and switch sides

Serve/Receive Drills

Four of the 5 lesson sessions spent time on serve/receive. The range of time for the 5 serve/receive drills was 7 to 11 minutes. The player touches per minute ranged from

0.9 to 2.1. None of the drills focused on the serving priorities: float, speed, clearance, and placement; nor did they focus on jump float serves.

Serve/Receive

Minutes	Session	Total Touches	Group Touches per Minute - Total	Player Touches per Minute	Activity
10	Practice 57	123	12.3	2.1	Serve and receive drill, where they switch sides
11	Practice 67	138	12.5	1.8	Serve to target
8	Practice 90	90	11.3	1.4	Serve and return
7	Skills/Transition	64	9.1	1.1	Serve and return - person who misses then serves
8	Practice 90	66	8.3	0.9	Serve and return - person who misses then serves

Positioning Drills

Two of the 5 lesson sessions spent time on positioning and transitioning. The range of time for the 3 positioning drills was 5 to 23 minutes. The player touches per minute ranged from 0.6 to 0.8.

When teaching positioning, coaches often have players stand on the court in the 6 rotations while the coach explains how the players should react to different shots.

Because these discussions are often detailed and lengthy, it is difficult for players to retain the key points.

A more appropriate way for players to remember positioning or transitioning is to include more touches with the discussions.

Positioning

Minutes	Session	Total Touches	Group Touches per Minute - Total	Player Touches per Minute	Activity
5	Skills/Transition	38	7.6	0.8	2 on six cover court
23	Practice 67	105	4.6	0.7	Play simulation - with emphasis on positioning
9	Skills/Transition	51	5.7	0.6	Transition drill

Playing

Coaches in 4 of the 5 lesson sessions spent time playing. The range of time for the 6 playing "drills" was 5 to 38 minutes. The longest "drill" was a scrimmage. The player touches per minute ranged from 0.4 to 1.4. The playing drills lacked the intensity of tournament match play. As such, they had limited value to the players.

USAV Volleyball advocates that "the game teaches the game. The results of this analysis suggest that the game is taught by game-like drills, such as those used in the Hitting Clinic. Many of the drills in that session had a high number of touches per

minute and were played in game like settings, i.e. score was kept, the competition was intense, and the pace of play replicated a game situation.

**Playing**

Minutes	Session	Total Touches	Group Touches per Minute - Total	Player Touches per Minute	Activity
11	Practice 90	119	10.8	1.4	2 on six cover court
11	Practice 67	74	6.7	1.0	Play 6 on 3
38	Practice 90	211	5.6	0.8	Scrimmage
5	Practice 57	18	3.6	0.6	Play
5	Practice 57	16	3.2	0.5	Play
5	Skills/Transition	60	4.0	0.4	Play

LESSON SESSIONS

On the next five pages, the activities and touches per minute are provided for the 5 lesson sessions. Each session is coached by a different team of coaches. The Hitting Clinic had the highest number of touches even though it was the shortest session.

The coaches of that session are highly regarded for the intensity, fast pace, and number of meaningful touches in their camps, clinics, private lessons, and club team practices.

Hitting Clinic

Time	Minutes	Total Touches	Group Touches per Minute - Total	Player Touches per Minute	GTM - Touch Time	PTM - Touch Time	Activity
starts 8:00							
ends 8:03	3	0	0.0	0.0			Discussion
ends 8:08	5	172	34.4	5.7	34.4	5.7	Control Hit Around Block Drill (2 groups/half court)
ends 8:16	8	360	45.0	7.5	45.0	7.5	Control Hit Around Block Game (2 groups/half court)
ends 8:28	12	160	13.3	2.2	13.3	2.2	Self-set Hitting (CC, line, cut, roll, hit off block)
ends 8:29	1	0	0.0	0.0			Discussion
ends 8:37	8	217	27.1	4.5	27.1	4.5	2-shot hit game - 2nd ball must be a hit (2 groups/half court)
ends 8:38	1	0	0.0	0.0			Discussion
ends 8:48	10	123	12.3	2.1	12.3	2.1	Pass, set, hit game
ends 8:53	5	75	15.0	2.5	15.0	2.5	4-spike rapid fire - Hit four spikes transition
ends 9:00	7	132	18.9	3.1	18.9	3.1	4-on-4 cross court, focus on strong side hitting
	60	1,239	20.7	3.4	22.5	3.8	

Note: Coach touches not included, feeds not included if they were tossed balls.

Note: Six players in the session.

Note: Two coaches.

Comments

The Hitting Clinic had 6 players ranging from 12 to 16 years old. The session had 3 discussions totaling 5 minutes, or 8.3% of the total time.

There were 7 different hitting drills ranging from 2.2 player touches per minutes to 7.5 player touches per minute. This wide range added variety to the practice and simulated the ebbs and flows of match play.

On average, the players touched the ball 3.4 times per minute or every 18 seconds. There were 206 total touches during the clinic. The players had time to receive

coaching, think about the shot they had most recently hit, observe other players, and mentally prepare for the next shot. Players were engaged in the practice at all times.

The clinic was fast-paced, intense, had varied levels of activity, and simulated match play. The mix of activities included drills with one ball in play on the full court. Other drills had two balls in play on a half court.

While it may not be possible or appropriate to maintain this level of activity at club practices for an entire season, this clinic illustrates how touches can be optimized with proper planning and selection of drills. .

Team Practice (67 minutes activity time)

Time	Minutes	Total Touches	Group Touches per Minute - Total	Player Touches per Minute	GTM - Touch Time	PTM - Touch Time	Activity
starts 5:00							
ends 5:05	5	0	0.0	0.0			Court Setup, Stretching, Discussion
ends 5:10	5	85	17.0	2.4	17.0	2.4	Pole weave, one player hitting ball at a time-shallow
ends 5:16	6	94	15.7	2.2	15.7	2.2	Pole weave, one player hitting ball at a time-deeper
ends 5:27	11	138	12.5	1.8	12.5	1.8	Serve to target
ends 5:43	16	0	0.0	0.0			Discussion about positioning, walk through rotations
ends 6:06	23	105	4.6	0.7	4.6	0.7	Play simulation - with emphasis on positioning
ends 6:17	11	74	6.7	1.0	6.7	1.0	Play 6 on 3
ends 6:19	2	0	0.0	0.0			Discussion
ends 6:30	11	99	9.0	1.3	9.0	1.3	One hitting line
	90	595	6.6	0.9	8.9	1.3	

Note: Coach touches not included, feeds not included if they were tossed balls.

Note: Seven players in the session.

Note: One coach.

Comments

The 7 players were 11, 12, or 13 years old. This session included 3 discussions totaling 23 minutes, or 25.6% of the practice. One of these discussion periods included a 16 minute lecture about positioning, followed by a 23 minute play simulation with limited touches.

There were 6 different drills ranging from 0.7 player touches per minutes to 2.4 player touches per minute. The drill with the highest number of touches was the pole weave drill, an activity that has a modest level of touches per minute. Some of the skills required for this drill do not transfer to match play.

On average the players touched the ball 0.9 times per minute or less than once a minute. The only time multiple balls were in play was when the players practiced their serves.

The slow pace of the practice did not simulate match play and at times the players were not fully engaged.



Team Practice (90 minutes activity time)

Time	Minutes	Total Touches	Group Touches per Minute - Total	Player Touches per Minute	GTM - Touch Time	PTM - Touch Time	Activity
starts 6:00							
ends 6:11	11	0	0.0	0.0			Court Setup, Stretching, Discussion
ends 6:28	17	308	18.1	2.3	18.1	2.3	Coach feed, back row pass to setter - two hits
ends 6:31	3	0	0.0	0.0			Change drills
ends 6:39	8	90	11.3	1.4	11.3	1.4	Serve and return
ends 6:41	2	0	0.0	0.0			Discussion
ends 6:49	8	98	12.3	1.5	12.3	1.5	7 ball run to a different position coach fed
ends 6:51	2	0	0.0	0.0			Discussion
ends 6:59	8	66	8.3	0.9	8.3	0.9	Serve and return - person who misses then serves
ends 7:04	5	0	0.0	0.0			Discussion
ends 7:42	38	211	5.6	0.8	5.6	0.8	Scrimmage
ends 7:46	4	0	0.0	0.0			Switch courts
ends 7:57	11	119	10.8	1.4	10.8	1.4	2 on six cover court
ends 8:00	3	0	0.0	0.0			Stretch/discussion
	120	892	7.4	1.0	9.9	1.3	

Note: Coach touches not included, coach feeds not included, player toss feeds not included.

Note: Players vary from 6 to 9, typically 8, average = 7.7 players.

Note: Two coaches.

Comments

Between 6 and 9 players participated in this drill session. This practice included players ranging in age from 12 to 14. They were from different teams and participated in segments of this practice session. The 7 discussions totaled 30 minutes, or 25.0% of the practice. This time included court setup, warm-ups, discussions, switching courts, and cool down.

There were 6 different drills ranging from 0.8 player touches per minutes to 2.3 player touches per minute. The 7-ball drill allowed the players to hit a variety of different shots; however, the sequence does not replicate match play, nor did it produce a high number of touches. As such the drill has a low level of transferability to match play. On average the players touched the ball 1.0 times per minute. At no point during the practice were multiple balls in play.

The slow pace of the practice did not simulate match play nor did it encourage engagement in the practice. The number of touches can be increased by working on skills in stations or playing on a half-court and using multiple balls. Another thought is to select a different set of drills to raise the player's skills to a higher level.



Time	Minutes	Total Touches	Group Touches per Minute - Total	Player Touches per Minute	GTM - Touch Time	PTM - Touch Time	Activity
starts 6:00							
ends 6:01	1	0	0.0	0.0			Discussion
ends 6:09	8	101	12.6	1.6	12.6	1.6	Coach (2) feed, pass to setter, sets to coach/players/warm-up
ends 6:11	2	0	0.0	0.0			Discussion
ends 6:18	7	64	9.1	1.1	9.1	1.1	Serve and return - person who misses then serves
ends 6:21	3	0	0.0	0.0			Discussion - blocking hitting transition
ends 6:37	16	0	0.0	0.0			Shadow transition/block - no balls - movement only
ends 6:39	2	0	0.0	0.0			Discussion - positioning
ends 6:59	20	0	0.0	0.0			Conditioning
ends 7:01	2	0	0.0	0.0			Discussion
ends 7:05	4	74	18.5	2.1	18.5	2.1	Coach toss to setter then hit
ends 7:07	2	0	0.0	0.0			Discussion
ends 7:12	5	60	12.0	1.3	12.0	1.3	Coach toss to setter then hit
ends 7:17	5	0	0.0	0.0			Discussion - hitting and transition
ends 7:26	9	51	5.7	0.6	5.7	0.6	Transition drill
ends 7:28	2	0	0.0	0.0			Discussion
ends 7:33	5	38	7.6	0.8	7.6	0.8	2 on six cover court
ends 7:41	8	153	19.1	2.1	19.1	2.1	Hitting lines
ends 7:45	4	0	0.0	0.0			Discussion
ends 8:00	15	60	4.0	0.4	4.0	0.4	Play
	120	601	5.0	0.6	9.9	1.2	

Note: Coach touches not included, coach feeds not included, player toss feeds not included.

Note: 8 Players for first half, 9 players for second half, average = 8.5 players.

Note: 2 Coaches.

Comments

The 8-9 players in this practice session were 12 and 13 years old. The practice included a 20 minute conditioning session and 10 discussions. The discussions totaled 39 minutes, or 32.5% of the practice. There were general discussions and an overview of hitting and transitioning. In addition there was a 16 minute drill where players shadowed the transition from blocking to hitting without any touches. The 8

drills ranged from 0.4 player touches per minutes to 2.1 player touches. On average the players touched the ball less than 1.0 times per minute. The highest number of player touches when were in hitting lines. The slow pace of the practice did not simulate match play.

Team Practice (57 minutes activity time)

Time	Minutes	Total Touches	Group Touches per Minute - Total	Player Touches per Minute	GTM - Touch Time	PTM - Touch Time	Activity
starts 6:00							
ends 6:01	1	0	0.0	0.0			Discussion
ends 6:19	18	0	0.0	0.0			Paired warm-up, throw/bounce balls, set to each other, etc.
ends 6:21	2	0	0.0	0.0			Discussion
ends 6:39	18	252	14.0	1.6	14.0	1.6	Coach toss set and hit 2 lines
ends 7:11	32	0	0.0	0.0			Conditioning
ends 7:13	2	0	0.0	0.0			Discussion
ends 7:21	8	88	11.0	1.2	11.0	1.2	Get in a circle, person in middle passes
ends 7:22	1	0	0.0	0.0			Discussion
ends 7:32	10	123	12.3	2.1	12.3	2.1	Serve and receive drill, where they switch sides
ends 7:34	2	0	0.0	0.0			Discussion
ends 7:45	11	79	7.2	1.2	7.2	1.2	Coach toss to back row play points and switch sides
ends 7:50	5	18	3.6	0.6	3.6	0.6	Play
ends 7:54	4	0	0.0	0.0			Girl got hurt
ends 7:59	5	16	3.2	0.5	3.2	0.5	Play
ends 8:00	1	0	0.0	0.0			Closing discussion
	120	576	4.8	0.6	10.1	1.2	

Note: Coach touches not included, coach feeds not included, player toss feeds not included.

Note: Players vary from 6 to 9, typically 8, average = 8.1 players.

Note: Two coaches for first 1:22 of practice.

Comments

The 6-9 players in this practice session were 11 and 12 years old. The 8 discussions totaled 31 minutes, or 25.8% of the practice. This time included discussions related to drills, time to take care of an injured player, and warm-ups. The warm-ups lasted 18 minutes and included paired activities such as toss and catch, passing, and setting. There was minimal interaction between the players and the coaches during this warm-up period.

In addition, the players spent 32 minutes in conditioning drills off the court. The players spent only 57 minutes of a two hour practice on drills that would directly improve their volleyball skills.

The drills ranged from 0.5 player touches per minutes to 2.1 player touches per minute. The players got about half their hits for the entire practice when the coaches ran two hitting lines for 18 minutes. On average the players touched the ball less than 1 time per minute.



COACHES MUST BE CONCISE IN THEIR DISCUSSIONS AND INSTRUCTIONS

Gym time is an expensive and precious commodity. It must be used wisely.

Coaches must be punctual in starting practice and the activities within the practice must be planned and executed precisely.

Consider the example of a coach who spends an average of 20% of the practice time in activities where balls are not being touched (court setup, warm-ups, discussions, lectures, water breaks, dealing with injured players, and cool-downs.) That would mean that 24 minutes of each practice were allocated to those activities and 96 minutes were spent in activities that might directly improve a player's skills (drills and playing).

If a player had 2.5 touches per minute of touch time that would mean she would get 240 touches during a single practice. That would be 17,280 touches during a season (17,280= 240 times 72 practices; 72 practices = 3 times per week for 24 weeks). This is highlighted in the table on the right.

If, on average, 30% of the practice time was spent in non-volleyball related activities then the player would get 210 touches per practice or 15,120 touches for the season. This is also highlighted in the table on the right.

The difference between these two scenarios is 2,160 touches over the course of the season.

17,280 touches minus 15,120 touches = 2,160 touches.

At a rate of 240 player touches per practice, that number of touches is equivalent to 9 practice sessions.

Percent of Time in Discussions	Practice Minutes	Drill Time Less Discussions	Player Touches Per Minute Touch Time	Player Touches Per Practice Touch Time	Player Touches per Season 72 Practices
10%	120	108	2.5	270	19,440
15%	120	102	2.5	255	18,360
20%	120	96	2.5	240	17,280
25%	120	90	2.5	225	16,200
30%	120	84	2.5	210	15,120
35%	120	78	2.5	195	14,040
40%	120	72	2.5	180	12,960

The amount and percent of discussion time for each session is listed below:

- Hitting clinic, 5 of 60 minutes, 8.3%.
- Team practice 67, 23 of 90 minutes, 25.6%.
- Team practice 90, 30 of 120 minutes, 25.0%
- Skills session/transition, 39 of 100 minutes (conditioning excluded), 39.0%.
- Team practice, 31 of 88 minutes, (conditioning excluded) 35.2%.

MEANINGFUL TOUCHES MATTER

Meaningful touches make a difference in the rate at which players and teams improve.

The number of touches may be determined by the time spent on non-volleyball activities (setup, warm-up, discussions, dealing with injured players, cool-downs). As well, teams may spend time in strategy talks, working on mental toughness, or reviewing videos of match play. All of these activities can play an important role in the learning process even if no meaningful touches are associated with them.

In addition, the number of touches may vary as a result of the skill level of the athletes, number of courts, equipment and training aids, amount of practice time, coaching philosophy, and the drills selected.

While the number of touches matters, coaches should optimize, rather than maximize, the number of touches based on the needs of the team.

Consider the following two scenarios:

1. A player on a team that averages 1.0 meaningful touch every minute, or 120 touches every practice. This player will get 8,640 touches during the season.
2. On the other hand a player that averages 2.0 meaningful touches every minute, or 240 touches every practice, will get 17,280 touches during the season.

Both scenarios are highlighted in the table on the right.

The difference between these two scenarios is 8,640 touches over the course of the season.

$17,280 \text{ touches} - 8,640 \text{ touches} = 8,640 \text{ touches}$.

That number of touches is equivalent to 36 practice sessions. In other words, the team with 2.0 meaningful player touches per minute is theoretically half a season ahead of the team that gets 1.0 meaningful player touches per minute by the end of the season. (As mentioned at the start of this document, there are factors other than touches that impact how much a team improves.)

Meaningful touches matter! It is essential for coaches to optimize the number of touches in their practices.

Practice Minutes	Number of Players	Player Touches Per Minute	Player Touches Per Practice	Group Touches Per Practice	Player Touches per Season (72 practices)
120	9	4.0	480	4,320	34,560
120	9	3.5	420	3,780	30,240
120	9	3.0	360	3,240	25,920
120	9	2.5	300	2,700	21,600
120	9	2.4	288	2,592	20,736
120	9	2.3	276	2,484	19,872
120	9	2.2	264	2,376	19,008
120	9	2.1	252	2,268	18,144
120	9	2.0	240	2,160	17,280
120	9	1.9	228	2,052	16,416
120	9	1.8	216	1,944	15,552
120	9	1.7	204	1,836	14,688
120	9	1.6	192	1,728	13,824
120	9	1.5	180	1,620	12,960
120	9	1.0	120	1,080	8,640
120	9	0.5	60	540	4,320

The player touches per practice for each session is listed below:

- Hitting clinic 3.4.
- Team practice 67 0.9.
- Team practice 90 1.0.
- Skills session/transition 0.6.
- Team practice 0.6.

CLOSING THOUGHTS

This analysis of 5 practice sessions has meaningful implications for the way volleyball practices should be structured. In summary:

- 4 of 5 practice sessions averaged 1.0 player touches per minute or less.
- 5 of 33 drills had 2.5 meaningful touches per minute.
- 4 of 5 coaches spend 1/4 of their practice time in activities that do not include meaningful touches.
- Traditional drills, such as single hitting lines, had the lowest number of touches.
- Game-like drills teach the game; however, playing games may result in a low number of player touches.
- By the end of the season many players will be at least a half season behind players who were in programs where the number of touches is optimized.

Session	Practice Time	Non-Volleyball Minutes	Total Touches	Player Touches per Minute
Hitting Clinic	60	5	1,239	3.4
Practice 67	90	23	595	0.9
Practice 90	120	30	892	1.0
Skills/Transition	120	59	601	0.6
Practice 57	120	63	576	0.6

As stated earlier, this mini-study has limitations; however, anecdotal evidence suggests the basic findings are representative of the coaching in recreation programs, secondary school teams, and club volleyball in Colorado.

The instructional styles and philosophies of many coaches are influenced by the coaches they had when they were younger, parent expectations, and the directives of their club manager or athletic directors. Most coaches are knowledgeable about the sport and passionate about working with kids, but they lack the knowledge, experience, and mentoring to run efficient practices. Coaches use "traditional" drills with a low volume of touches because they know those drills, their peers use them, and they feel comfortable putting them in their practice plan.

The demand for quality coaches has grown as the popularity of the sport has increased over the past 25 years, but the supply has not kept up. In addition, there have been major rule changes and significant sport-specific research that has

increased the need for continuing education among coaches. As a result, the sport is faced with a conundrum.

- There are only a handful of people who are full-time credentialed volleyball coaches. Most are college coaches who have little influence on entry-level players.
- Many coaches receive little or no pay. They have difficulty rationalizing the time and expense of certification, mentoring, or continuing education. Ironically, they are the individuals who need it the most.
- Many club, recreation, and secondary school coaches don't pursue continuing education because they have full-time jobs in other professions.
- While there is a need to more coaches with greater training, club coaches are only required to have IMPACT certification from the USAV. This is an excellent short-course, but it does not sufficiently prepare a person to be a coach.
- Clubs seldom provide incentives or motivation for their coaches to improve their coaching skills and knowledge.



One of the greatest joys for an athlete is the sense of accomplishment that comes with mastering a skill or taking their game to the next level. It can be equally as rewarding for a coach to help an athlete experience that sense of accomplishment. Just as a good coach will push an athlete out of their comfort zone to foster growth, a good coach should also move out of their comfort zone to improve their instructional skills.

Athletes can only improve if they touch the ball in a meaningful way in practice. It takes a lot of work for a coach to make that happen on an ongoing basis.

Meaningful touches matter!

DRILLS AND THE OPTIMIZATION OF TOUCHES

The purpose of this analysis is to address the importance of optimizing meaningful touches in a practice session. This final section includes thoughts about how to

Thoughts about Drills

Drills should replicate match play so the skills learned are transferred to competitive situations.

Before conducting drills, coaches should explain:

- The purpose of the drill, how much time will be spent on the drill, and how it will improve the players' skills.
- How to do the drill.
- The roles that players will play in the drill, for example, they may pass, hit, or shag balls.

It is essential that players understand their roles in a drill and how that drill will make them a better player.

Coaches should keep drills simple and easy to understand. Their explanation of the drills and the purpose of the drills should be equally as simple.

Coaches should give names to their drills to reduce having to explain them every time.

Coaches should manage the time spent in drills just as they manage a game.

Coaches should plan their drills so that players can drink water every 15 to 20 minutes.

Coaches can use discussions related to drills as an opportunity to practice how they would discuss a team's performance during timeouts in a match.

Drills should be initiated in a game-like manner:

- Minimize coach-fed drills since the coach won't be playing in the upcoming matches.
- Reduce the number of dead-ball drills, drills started with a toss, or from the sideline.

effectively incorporate drills into a practice session and how to optimize the number of touches

Instead let the players start the drill with a roll shot, serve, or other shots they would use in match play.

Coaches should create an environment and culture that fosters learning when doing drills.

- Players must be encouraged to get out of their comfort zone to change and advance their skills.
- Players must understand that their outcomes will sometimes drop off before they improve. Coaches and teammates must support them during these times.
- Players must understand that failing during drills presents them with an opportunity and challenge to get better.
- Coaches must focus on measuring performance and effort rather than outcomes. Positive outcomes don't occur without effort and good performances.
- Players at different skill levels can do the same drill. Players with weaker skills may have different expectations than players with stronger skills. For example, middle school players may try to hit their serves 25 mph, while high school students may be expected to hit them 30 mph.

Coaches should monitor all drills, including warm-ups and cool downs, and provide succinct individual and team feedback.

- Players want to receive meaningful and positive, instructional feedback.
- Coaches should talk to their players about what type of feedback is most useful to them.
- Visual learning is the preferred learning style for many female athletes. Coaches should ask their players how they learn.
- Coaches should work with players to develop meaningful cues that help them when performing skills. For example, cues for a setter might be, "Get to the net, hands even, square up, set, and scrape." The use of cues allows coaches to provide meaningful feedback in a few words.

- Never say never and don't say don't. For example a coach can say, "Next time, hit your toss a foot further in front to get more float."
- Coaches should provide positive or instructional feedback rather than be a cheerleader. For example, a coach might say "Good reach on your attack!" instead of "Good shot!"
- Coaches should be specific with their feedback. For example coaches could say, "Set a 20-10 (twenty feet high on the ten foot line)" instead of saying, "Get your sets higher."

There are many ways to increase the number of touches and engagement in the drills.

- Have multiple balls in play.
- Split into smaller groups.
- Depending on the drill, players on the sideline may be charting the drill, conditioning, doing ball handling exercises, or a separate drill.
- Keep score and use alternate scoring methods.
- Teach players how to think on the court.
- Teach players how to win points.
- Teach players to be mentally tough.
- There are flurries of activity and rapid exchanges in match play. During the course of a practice, some drills should replicate this chaos.



Research has shown that players have greater retention and learn more quickly when they participate in drills that include a series of random shots rather than repetition of one shot. For example, setters must learn to set both good and bad passes.

Research has also shown that it is more efficient to teach the whole rather than the parts. Limit progressions as a method of teaching skills.

Safety is paramount! Be aware of the location of teaching carts, mats, tables, bleachers, clipboards, teaching aids, sweatshirts, water or sweat on the court, towels, and water bottles. Teach players to call out or stop play when balls roll onto the court. In addition, they should be taught to return stray balls in a manner that prevents players on other courts from being injured.

This short document was written with the intent of getting coaches to evaluate the drills they use in their practices and the number of touches associated with those drills. Coaches are encouraged to catalog their drills for future use.

About the Author Gary Horvath is a USAV CAP I level coach. He has coached volleyball primarily in recreation and middle school programs. As well, he is a Master Professional with the United States Professional Tennis Association. He has been recognized for coaching juniors and adults in programs ranging from entry level to highly competitive. In addition, he is a founder of the USA Professional Platform Tennis Association. In that capacity he helped develop the organizational structure, the certification criteria, and testing process for sport's teaching professionals. Horvath is a member of the Wilson Advisory Staff.