



Confédération
Européenne de
Volleyball



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The Coach as a Sherpa: Guiding Athletes Through a Learning-Based Volleyball Journey



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Européenne de
Volleyball**



play volleyball
grow with it



Today's Agenda

01

Learning

What is it? How it Works.

02

Small Court Games

The Currency of Contacts.

03

The Warm-Up

Misadventures, Science and Solutions.

04

Practice for Learning

Player 1 v Player 2.

What We Know and Don't Know Affects Our Athletes



“The evidence suggest that coaches’ assumptions and beliefs about learning influence their practice design and pedagogical approach.” NIH

Learning

What and How?



How Learning Works: Step by Step

Mia is contacting a volleyball for the first time.

On the outside, to her coach or parent, they see:

- The ball is flying everywhere
- She seems uncomfortable with this object hitting her forearms
- She is given instruction but seems to ignore it
- She smiles when one ball goes the way she wants it to



What's Happening Inside Her Brain...

When learning a new movement, the brain sends electrical signals through networks of neurons, forming connections that begin to create a “neural pattern” for that specific action—like a volleyball pass.



Connections are Made

Neurons are brain cells that communicate by receiving signals through dendrites and sending them via axons. As these neurons fire together during practice, they begin to form coordinated patterns that support movement. These patterns are not rigid “scripts” stored in your brain, but adaptable coordination tendencies that support consistent movement in familiar situations.



Credit: Lila Landowski

Motor Programs: A “Script” v. Adaptation

Some view motor programs as “scripts” for movements—for example, a volleyball server who repeats the same serving motion without adjusting to the opponent, the conditions, or the game context.



What we really want from athletes is the ability to **ADAPT** their movement based on the environment and game context. While the player still uses a motor program to serve, they can adapt—targeting the weakest passer, aiming for a seam, or adjusting to game conditions.



In a dynamic sport like volleyball, rigid “scripted” movements are less effective than flexible, context-sensitive ones.

Meanwhile, Outside Her Brain...

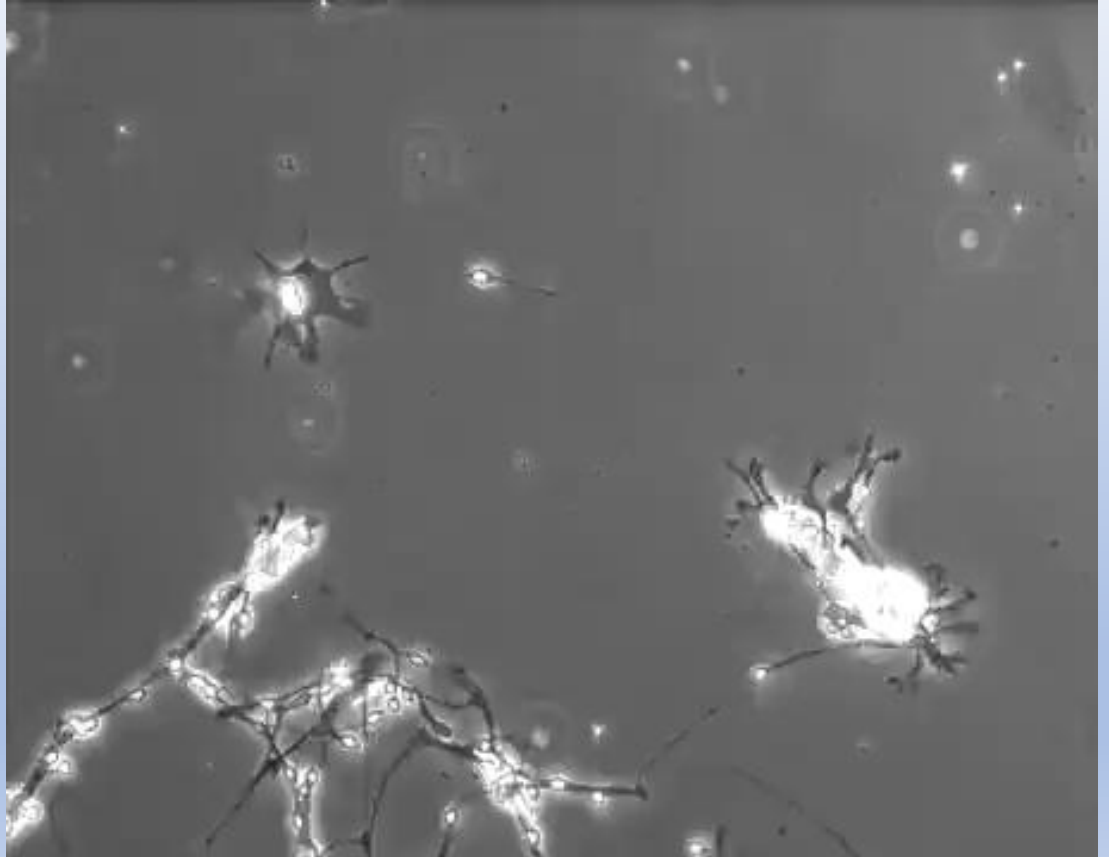


Mia has been working on her passing and is learning:

- **How stiff to keep her arms**
- **How tightly to keep her arms together**
- **How to hold her hands**
- **Where her body needs to be positioned**
- **How to transport the ball to another player**
- **How to get the ball over the height of the net**
- **Not to be afraid of the ball**

With More Contacts, Mia's Brain Responds

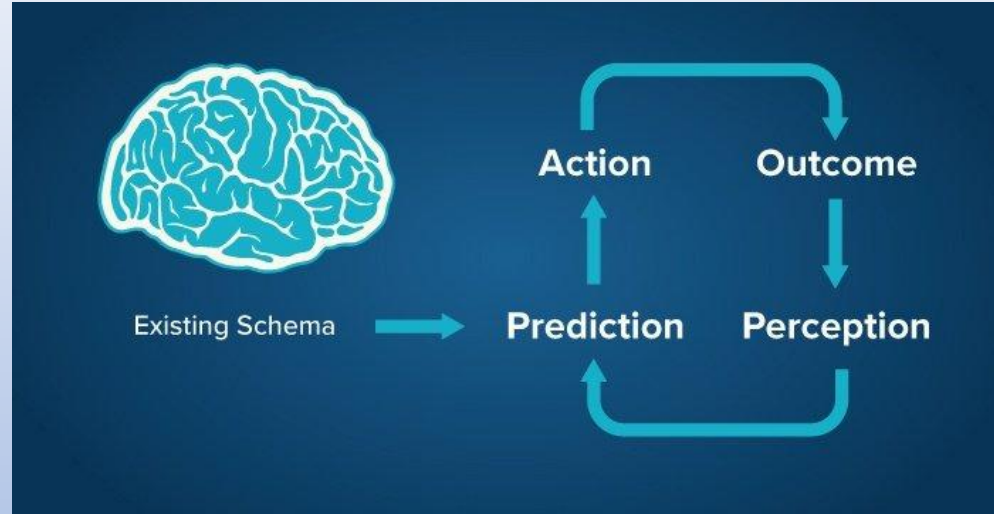
With repeated practice, Mia's neurons become coated in myelin—a fatty sheath that helps electrical signals travel faster and more efficiently. This supports the development of a motor program, helping her movement evolve from slow and awkward to fast and automatic.



Perception Action Cycle

When we make a prediction about an upcoming action—and that prediction is correct—the motor program is reinforced and becomes more efficient.

If our prediction is incorrect, the brain reevaluates the situation and updates the motor program based on the new sensory feedback.



That's how learning happens—through prediction, feedback, and adaptation.

Review of How We Learn

For a Step-by-Step process of how we learn, please click the QR code.



THE SCIENCE OF LEARNING MATTERS!

As a Coach, as a VolleySherpa:

- HOW you introduce skills to players matters.
- HOW you train the skills matters.
- **Context rules the learning space.**
- HOW much variability is introduced and WHEN matters.



Learning and Performance are NOT the same.

The Difference Between Learning and Performance

Feature	Learning	Performance
Time Frame	Long-term	Short-term
Stability	More stable	Fluctuates
Evaluation	Retention, transfer	Immediate outcome
Influenced By	Practice design, feedback quality	Fatigue, pressure, environment
Goal	Durable skill acquisition	Execution in the moment



The Science of Learning

Three Principles to Utilize in every Training

Game-Like Training

Train the way the game is played

Perception and Action Coupling

Making Learning Efficient and Productive

Problem Solving

Making Athletes Adaptable



Game Like Training

If we are tossing balls to Mia on our same side of the net 100X a practice, Mia will get good at that skill, a Motor Program will develop.

But what happens when Mia begins to play, and the ball is coming from OVER the net? Yes, a NEW Motor Program must be developed.

What happens when Mia encounters a ball much faster than the ones tossed to her in practice? Yes, a NEW Motor Program must be developed.



From Beginner to Next Level

When we just start an athlete on their journey, we must provide appropriate coaching. Nothing to harm them or scare them, nothing too fast in the beginning. Simple movements and instructions. Blocked Training.

But as they show a competence toward the skill, as a VolleySherpa taking them to the heights of their journey, we cannot let them rest in their “comfort zones.”

They need to learn to react, make decisions, adapt for speed and movement. Random Training.



Is Your Training Game Like?

Does it look like the game you are training for?

Practice environments should provide all information that would be present in a game situation, where/when possible.

Are the Players exposed to the elements of the game:

- Movements
- Decision Making and Problem Solving
- Speed, Spacing, Interactions
- Chaos

Are we Coupling Action and Perception?



Perception and Action Coupling

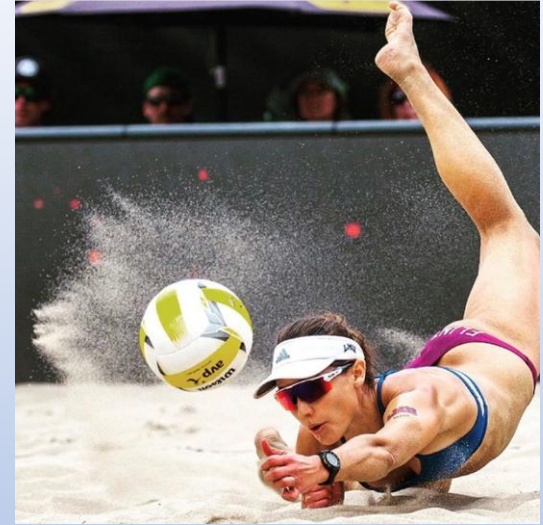
"We must perceive in order to move, but we must also move in order to perceive." James J. Gibson

Perception is the athlete's understanding of sensory information: what they see, hear, and experience on the field.

Action is the actual movement made by the athlete.

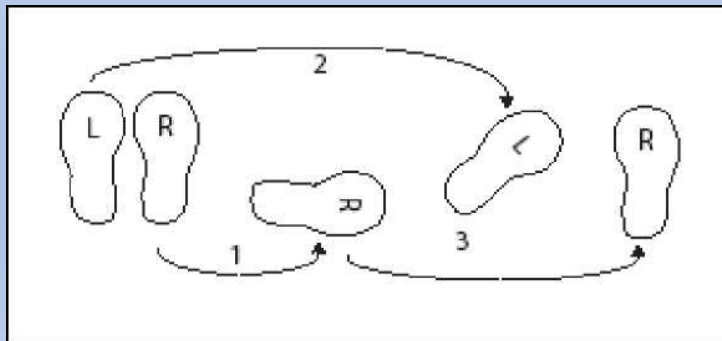
Coupling means that perception and action aren't separate - they're intertwined.

"Skill is a relationship between information and movement. We can't train action in the absence of information that specifies how and when it can be used." Rob Gray



Little to NO Transfer with just Action

Decomposition, or ‘breaking down’ skills into small chunks has little transfer to the game we are training for. Context of the game is vital.



NO Matter the Level, We MUST Train OUR Game



Coupling Action WITH Perception Builds **ADAPTIVE** Athletes



An Athlete becomes adaptive when taking in their environment and all the nuance that comes with it. The more the athlete couples action with perception, the more motor programs are developed, the more “experience” that athlete has to use in decision making on the court. We also refer to this as “reading” the game.

Problem Solving Separates Great Athletes From Good



Problem Solving Skills Available

Movement Solutions: Calling on the appropriate use of our body for that specific moment

Critical Thinking : Analyzing situations objectively and considering different approaches

Decision-Making : Making quick and effective choices under pressure

Adaptability : Adjusting strategies and tactics based on the changing game

Resilience : Bouncing back from setbacks and learning from mistakes

Perception and Action : These processes are intertwined, working together to create effective movement solutions



What Can WE Do As Coaches To Build Problem Solving Skills

- Offer Athletes Various Experiences
- Feedback
- Learning from Mistakes
- Teaching Challenge
- Injuries
- Responding to Opponent's Tactics
- Overcoming Mental Blocks
- Off Court Challenges



Combining All Three Science Based Concepts in Your Training



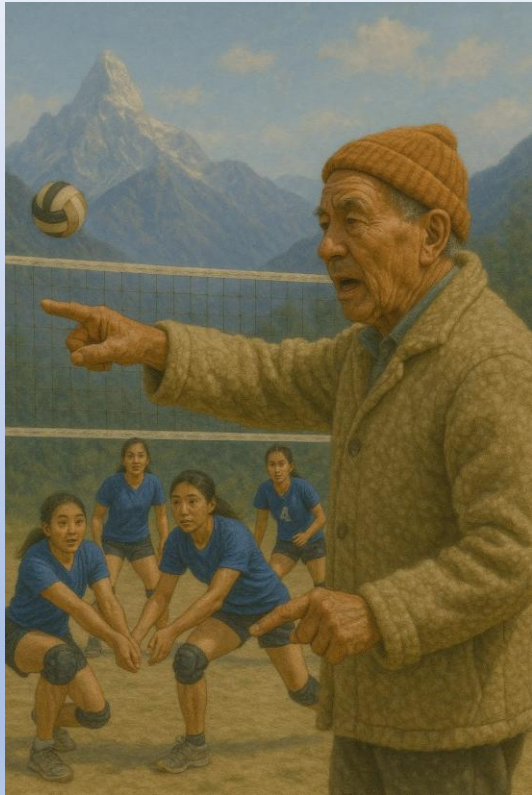
What can we do, as Coaches, as VolleySherpas, to ensure our trainings are Game Like, couple Perception AND Action and train Problem Solving?

Small Court Games

The Currency of Contacts



They Must Play!



As coaches and VolleySherpas, we need to
change the way we think....

**Training to play
needs to become
Playing to train!**

What are Small Sided Games?

Small Sided Games are competitions between small groups of players, usually 2 v. 2, 3 v. 3 or 4 v. 4 OR games played on a smaller, reconfigured court than a regular sized volleyball court.

This kind of training is used in many different sports.



Other Sports Are Successful With SSG's

*“Futebol de salao, that is five-a-side soccer, was the key to Brazilian soccer success. A study has shown that a kid who plays futsal from age 6 to 11-12 touches the ball **SIX TIMES PER MINUTE** more than a kid who plays soccer, and as we know, contact with the ball is the only way to learn this sport.”- Daniel Coyle, The Talent Code*



The Training Advantages of Small Sided/Court Games

- **MORE CONTACTS ON THE BALL!**
- Adaptation to Athlete's varied Skill level
- Faster reaction times may be necessary
- Constraints put upon the court size and configuration to guide players into behavioral changes
- Shorter distances equal the ball travelling less distance requiring faster reaction times and quicker problem solving
- It's FUN and Engaging!

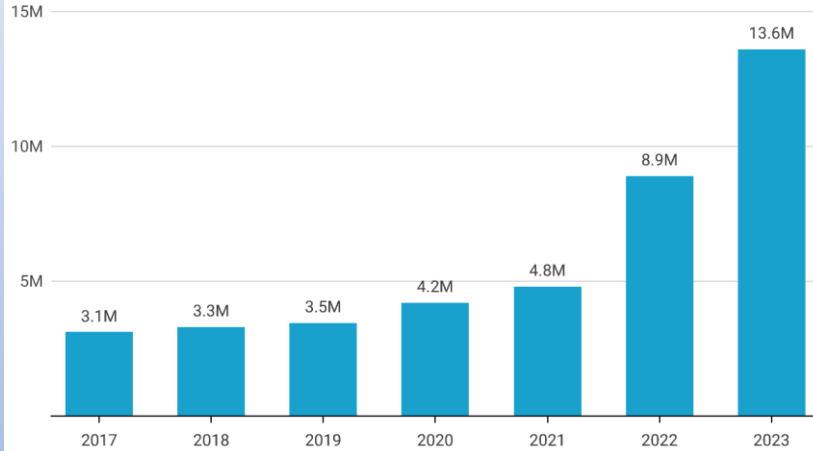


The Fastest Growing Sport in the U.S.

Total Pickleball Members in the U.S - By Year

Total Pickleball Players in Numbers

■ Total Pickleball Players



(Players in Numbers)

Source: Market.us News

- Pickleball grew by 46% since 2023.
- Easy to play, easy to learn
- Small Court
- More touches and opportunities



The background of the slide is a white surface with numerous US dollar bills falling from the top. The bills are in various orientations, some showing the front and others the back, creating a sense of motion and abundance. The bills are primarily green and white, with some yellow and blue accents.

**A VolleySherpa's
Currency is CONTACTS
in Context!**



Contacts Per Minute

2 v. 2



3.48



1.55

4 v. 4



.71

6 v. 6



Players were tracked on teams of 6, 4 or 2 players and the number of contacts they had during that game divided by the time of the game = **Contacts Per Minute**

The Genius of 1 v. 1



The 1 v. 1 Advantage



One Player
Per Side
Taking All The
Contacts

Concentration
Of Contacts



Skill Work in
a
Game-Like
Environment

Fast Paced, Attentional
Focus, Error Adaptation



The
Importance of
Decision
Making

Solving Problems on
A Smaller Scale



2 v 2, 3 v 3, 4 v 4 Equal MORE Contacts



Court Manipulation = Problem Solving

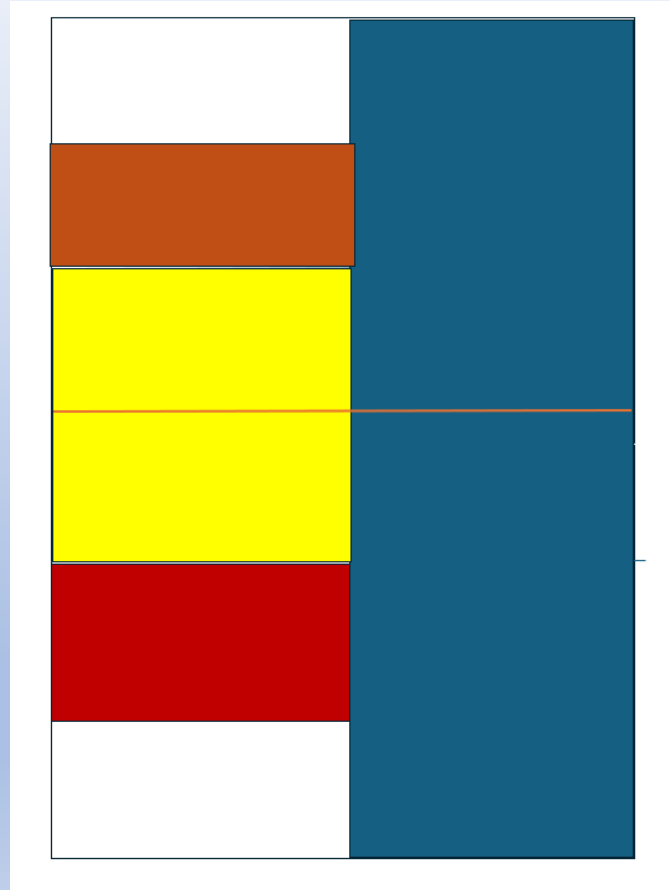
Shorter Distance = Faster Reading and Reaction Time

Longer Distance = More time to Read and Adapt to the ball/play

When Working on a specific skill, the court size can be helpful or more challenging for an athlete

Coaches can give constraints to these sizes for added stress on the athlete

Cross court, different configurations can be added stressors



USA Volleyball National Team 400' Court 5 v. 5



Small Sided Games Manual

For a review and other ideas
regarding Small Sided Games, click
the QR code for a manual.



8. 11. 2025

Barnhill

Position # 6

Quota (P15 G)

Focus:

Pl. 4.0m

Trans. 1.0m Twp. - 1D at 4.0 off

* Active 5. @ Bid 2.5.

1.00- Northward Quilt. Focus.

3.00- Routines: 2.5. Skillet, 1.00 Twp. 1.00 Onbit, 1.00 off.

2.00- Doubars: Combined Sum. 4. 7

2.25- Systems: ① ② ③ 6-m/1 (2.3-)

①

RT	AT	SM	KA
L ¹	SE	JP	KA
LN	PD	AL	TR

②

RT	AT	SM	KA
L ¹	SE	JP	KA
LN	PD	AL	TR

③

RT	AT	SM	KA
L ¹	SE	JP	KA
LN	PD	AL	TR

1) PD L¹ SE TR

2) AL JL JP TR

3) LL LD ZL GL

Series: Serv. Twp. 4. CT

ON: F2 BR = Sum.

S/R: F2 BR D.T. Side.

3.00- 6 Series: Serv. Bound.

Turning Tree = 5.

Series: Serv. 2B Bound.

Bound = Sum. 4. Serv.

6 Series.

* NB: Sh. D.T. Side.

Direct. B.H. Wye.

For. 1 = Split.

Coal Scoring.

Probs: Sum. 4. 9.

1 Ret. 1.

CTOPS

The Warm-Up

Misadventures, Science and Solutions



What is our Warm-Up For?



The warm-up is considered beneficial for increasing body temperature, stimulating the neuromuscular system and overall preparing the athletes for the demands of training sessions and competitions.

And Tradition says...
RUN AND STRETCH



But Science has Proven this Ineffective

EVEN the FIVB has changed their stance on running and stretching before training as being beneficial.

“New studies suggest that stretching prior to training is likely to promote injuries rather than preventing them.”

Warm-Up and Cool-Down



Modern approach to a warm-up

Today, the general view of warm-up exercises and their importance has shifted. New studies suggest that stretching prior to training is likely to promote injuries, rather than preventing them. These findings have been widely accepted as medically sound, and as a result, many athletes now avoid stretching before a workout, unless a specific existing injury requires them to do so.

In regards to volleyball, general warm-ups can be easily incorporated into the practice, by gradually increasing the physical demand on the players throughout the session. The players will then warm-up during the exercises themselves.

If a player is required to stretch in preparation for the training due to an existing injury, the player should do so before the practice session starts. Players should be advised that injury related stretching exercises should always be created with the consultation of a medical advisor.

What are Your Athletes Learning From Running and Stretching?



This is a **LEARNING** Competition and if your athletes are **NOT** touching a ball in warm-ups, they are behind.

From **ASMBVA Beach Volleyball** in Casablanca, every practice starts with touching a ball.



The Warm-Up as a Teaching Tool

Every Warm-Up can be an extension of what will be worked on in practice that day. Here you see bump setting toward the net being worked on which will transfer to practice later when that skill will be refined, called upon and needed in game play.



Calibration in Sport



Calibration is the process of adjusting movement actions to match an athlete's changing capabilities or the conditions of the environment.

Imagine walking onto a court and jump serving with no warm-up?

Imagine digging a hard driven ball having just walked in the gym?

Warm-Up is a Time for Calibration

Movement, timing, skills, settling into the environment and working with teammates are all part of calibration that can be accomplished in warm-up if used for learning.

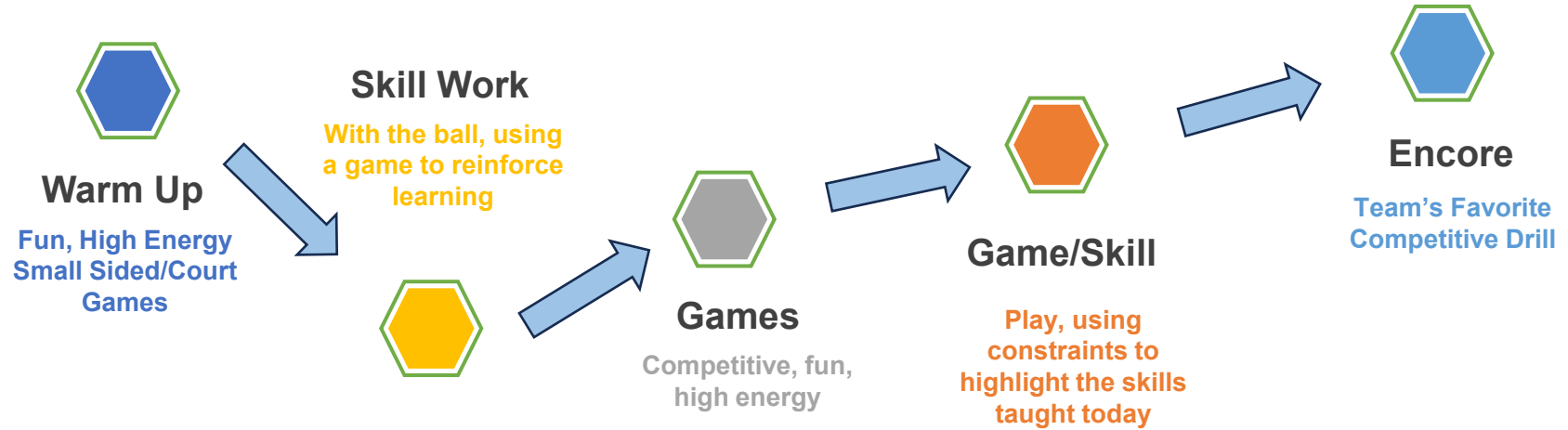


Warm-Up Essentials

- Use a ball
- Use the net
- Play small sided games
- Use to calibrate athlete skills going into practice
- The more context the better
- Vary games and drills
- Have FUN!



Practice Like a Concert



Practice for Learning

Player 1 versus Player 2



Tying it all together



Meet Nika on your left and Ema on your right.

Both are 17 years old. Both aspire to play as adults. Both are athletic, work hard and up till this season have enjoyed similar training as Outside Hitters. However, they are going to different clubs with different coaches this season.



Neka's Club Practices

A typical practice plan consists of:

- Run and stretch to warm-up (10 min)
- Hitting and Blocking footwork (15 min)
- Butterfly passing drill (15 min) {17 game Like touches}
- Serving Practice (15 min) {21 game like touches}
- Skill work taught siloed by OH position with assistant coach (25 min w/ 4 OH) {19 game like touches}
- Serving and passing (15 min) {22 game like touches}
- 6 v. 6 Scrimmage (20 minutes) {26 game like touches}
- Cool Down and stretch (5 min)



Neka practiced two hours, got 105 game like touches, 46 in game-like context.

Ema's Club Practices

A typical Practice Plan consists of:

- Warm-Up with 3 v 3 Small Court/Sided Games (15 min) {47 game like touches}
- Serving and Passing Partner work (10 min) {31 game like touches}
- Hitter-Blocker butterfly with setters and libs (15 min) {34 game like touches}
- 4 v 4 game with a skill emphasized and scored more (15 min) {38 game like touches}
- 6 v 6 fast entry scrimmage with constraints (25 minutes) {41 game like touches}
- 3 v 3 speedball with setters (15 min) {46 game like touches}
- Cool Down and stretch (5 min)

Ema practiced for two hours, got 237 game like touches, 206 in game-like Context.



Over the Course of the Season

32 Week Season from Oct. to May, two 2-hour practices per week



Ema



Neka



15,168 contacts on the season
13,184 using game like perception

6,720 Contacts on the season
2,944 using game like perception



Ema will be getting 56% more touches this season then Neka,
78% more contacts in game like context.

Practice Decisions can make a HUGE difference in
our Athletes



It IS a Learning Competition

Are we practicing for learning or are we practicing to look good/ coaching comfort?

Are we giving our athletes opportunities to problem solve?

Are we able to stress them at times to regulate in-game anxiety and nervousness?

Are Practice environments providing useful information that would be present in a game situation?

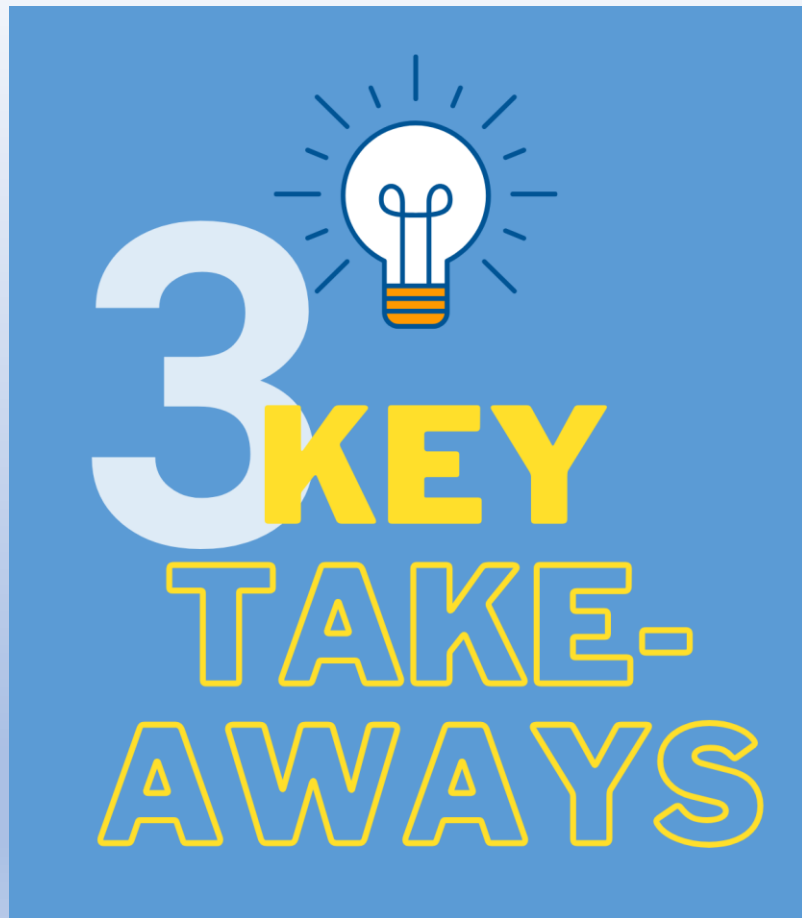
Are our games and drills within the context of the game?

Are we combining Action AND Perception in our Coaching?

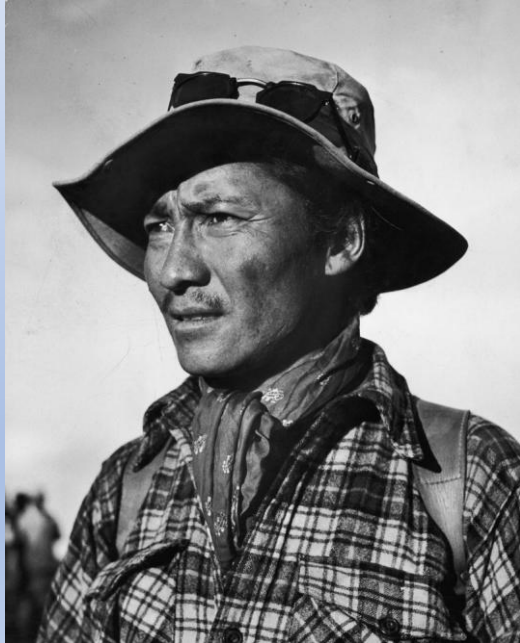
Are we being VolleySherpas?



1. Training to play needs to evolve into Playing to train!
2. The VolleySherpa's currency is contacts in context!
3. Practice Decisions can make a HUGE difference in Athletes



“Be Great, Make Others Great.” Tenzing Norgay



Thank You's





THANK YOU Q & A

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