

A Constraints-Led Approach to Activity Design in Sport Coaching



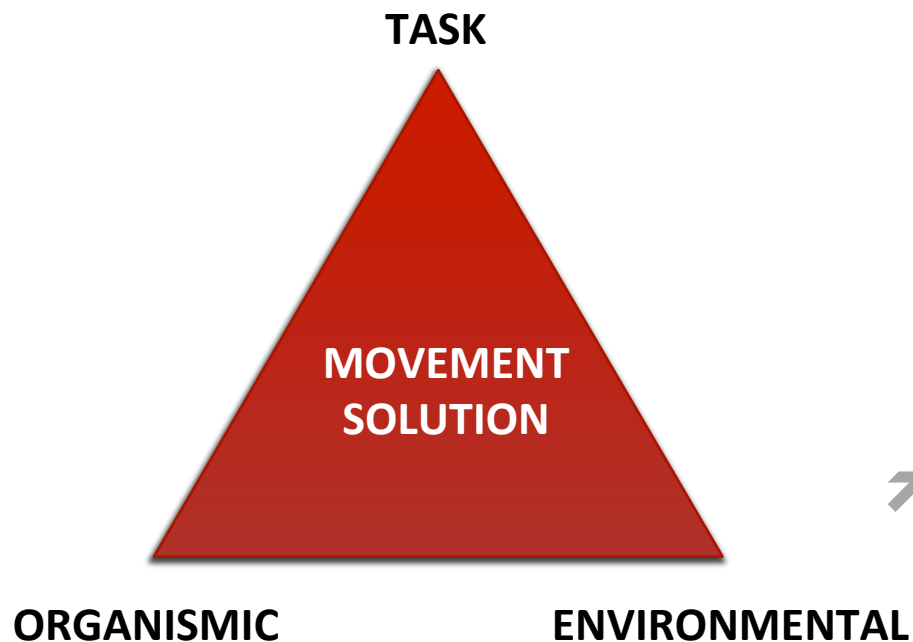
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Theoretical Background

- Dynamic Systems/Ecological Approach
 - Newell (1986) Movement patterns emerge as a function of dynamic interactions
- Teaching Games for Understanding (TGfU)
 - Thorpe, Bunker & Almond (1986) tactical understanding of WHAT to do
- Nonlinear Pedagogy
 - Chow et al. (2006) learning contexts that shape behavior
- Discovery Learning
 - Mosston & Ashworth (1994) exploration of possible task solutions

Constraints



- Newell (1986) identified 3 specific constraints that can influence movement production
 - Organismic
 - Task
 - Environmental
- The presence of one or more of these constraints influence the movement capabilities of the individual

Types of Constraint

- Organismic
 - Features such as height, weight, fitness, cognition, confidence
- Environmental
 - Wind, temperature, natural light, humidity are common
- Task
 - Movement Goal
 - Game Rules and/or dimensions
 - Implement dynamics

Examples of Constraint

➤ Organismic

- Greater CV fitness will result in the ability to run for a ball in the latter stages of a soccer match

➤ Environmental

- Identification of wind direction prior to a beach volleyball serve

➤ Task

- Goal – Speed versus accuracy of baseball pitch
- Rules – Badminton serve
- Implement – Basketball rim height

Constraints-led Coaching

Handford et al. (1997) suggested coaches need to provide experiences that allow problem solving, decision-making and include movement variability

➤ Facilitator

➤ Coach uses strategies to guide athletes to the desired outcome

➤ Designer

➤ Coach designs activities to facilitate desired performance characteristics

➤ Questioner

➤ Coach uses thoughtful questions to stimulate problem solving

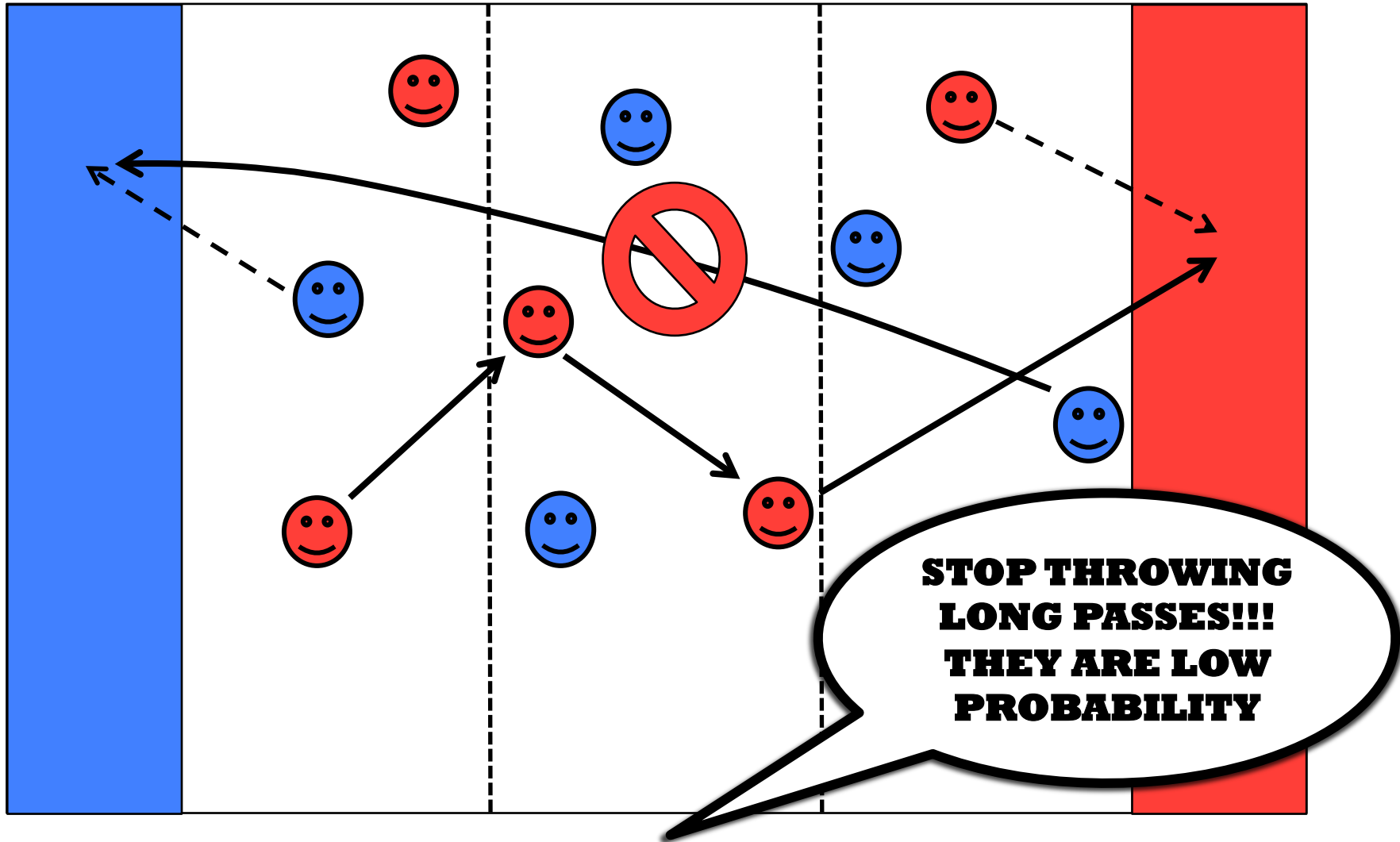
Constraints-Led Approach

- Coaches can design activities to do one of two things:
 - Prevent undesirable behaviors
 - Encourage desirable behaviors
 - **Negative effects of instructions?**
- This requires significant advanced planning of activity characteristics and instructional delivery
- Coker (2009) suggested activity conditions and modifications encourage learners to problem solve to meet task requirements

Invasion Game Activity

- Discuss how you could utilize constraints to facilitate desired behavior in an invasion game activity?
 - Identify the behavior you desire
 - Identify the constraint(s) you will implement
 - Explain the questioning you will use

Constraints-Led Invasion Game



3 Stage Framework for Activity Design



3 Stage Framework

➤ **Concept**

➤ What is the tactical concept to be learned?

➤ **Performance Characteristics**

➤ What specific cues do you want your athletes to learn?

➤ **Design**

➤ How will your activity facilitate the concept and delivery of teaching cues?

3 Stage Framework Example

➤ **Concept**

- Possession with Progression

➤ **Performance Characteristics**

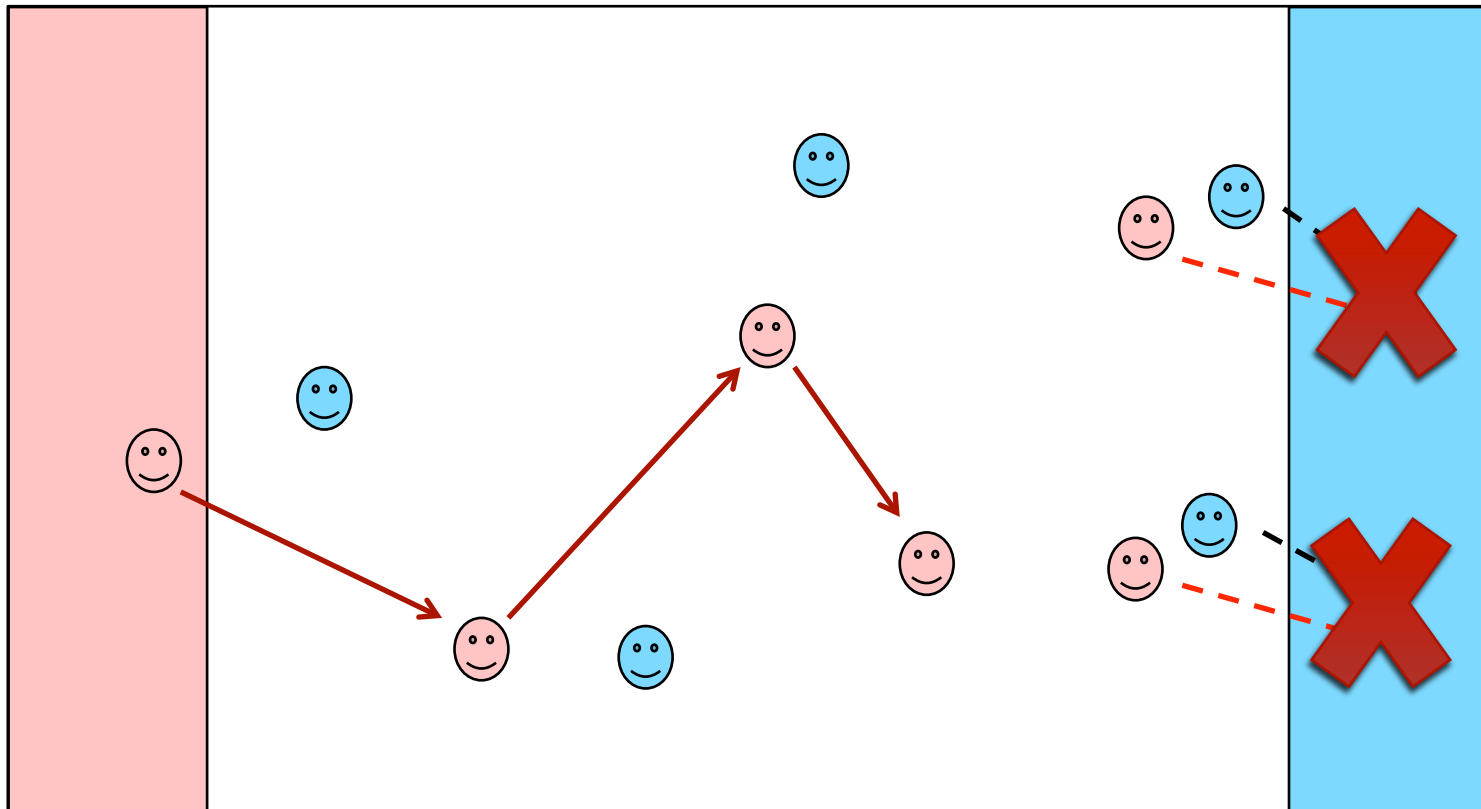
- Pass and move
- Keep ball moving to different players
- Create open passing angles
- Probing passes into different levels of field
- Move as a unit

➤ **Design**

- Conditions
 - # of passes (5), # of touches (2-3 touch)
- Modifications
 - Dimensions, field shape, # of players (6-7), player advantage

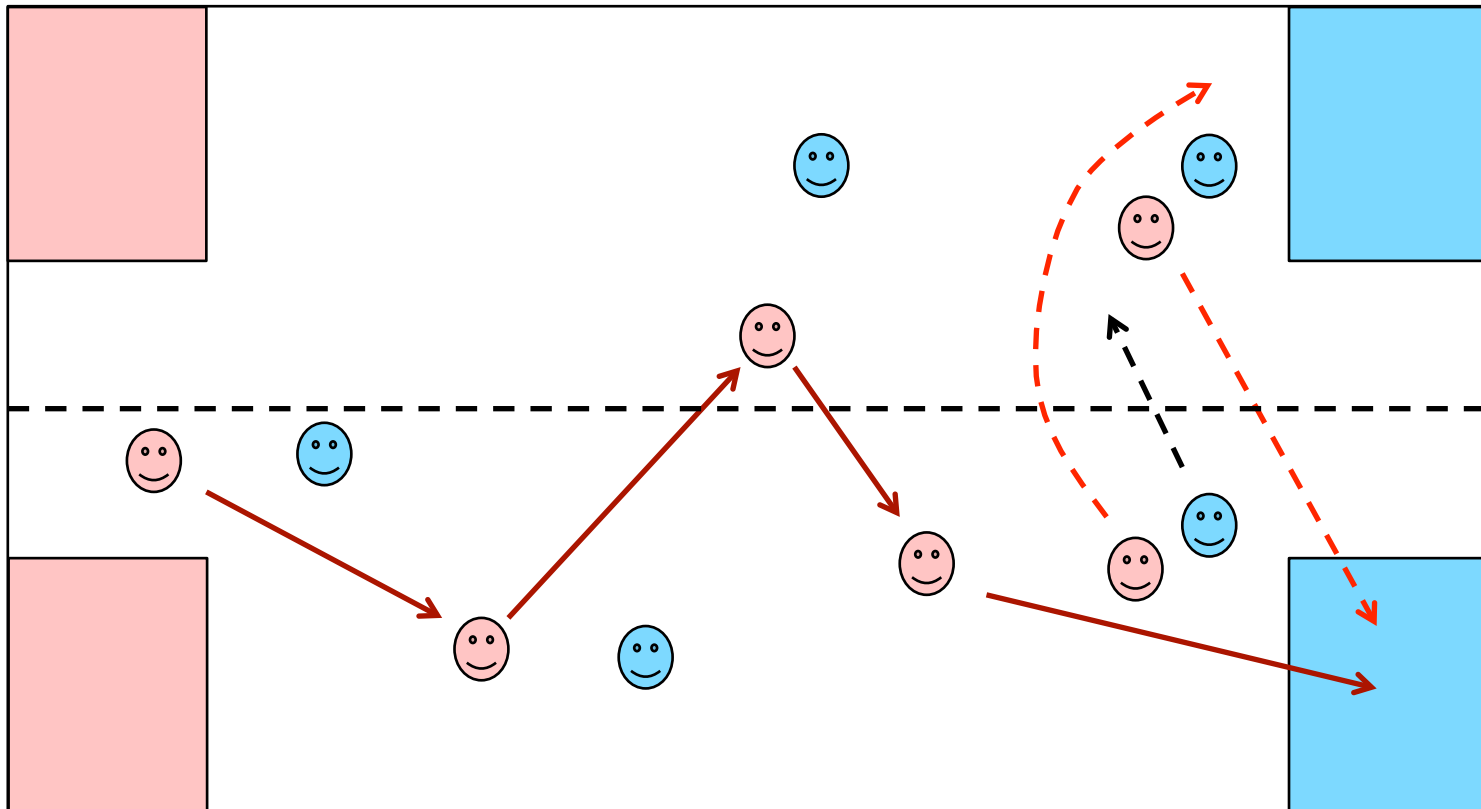
Constraints-Led Invasion Game

- Desired behavior is for players to switch positions to create space and be open for scoring passes

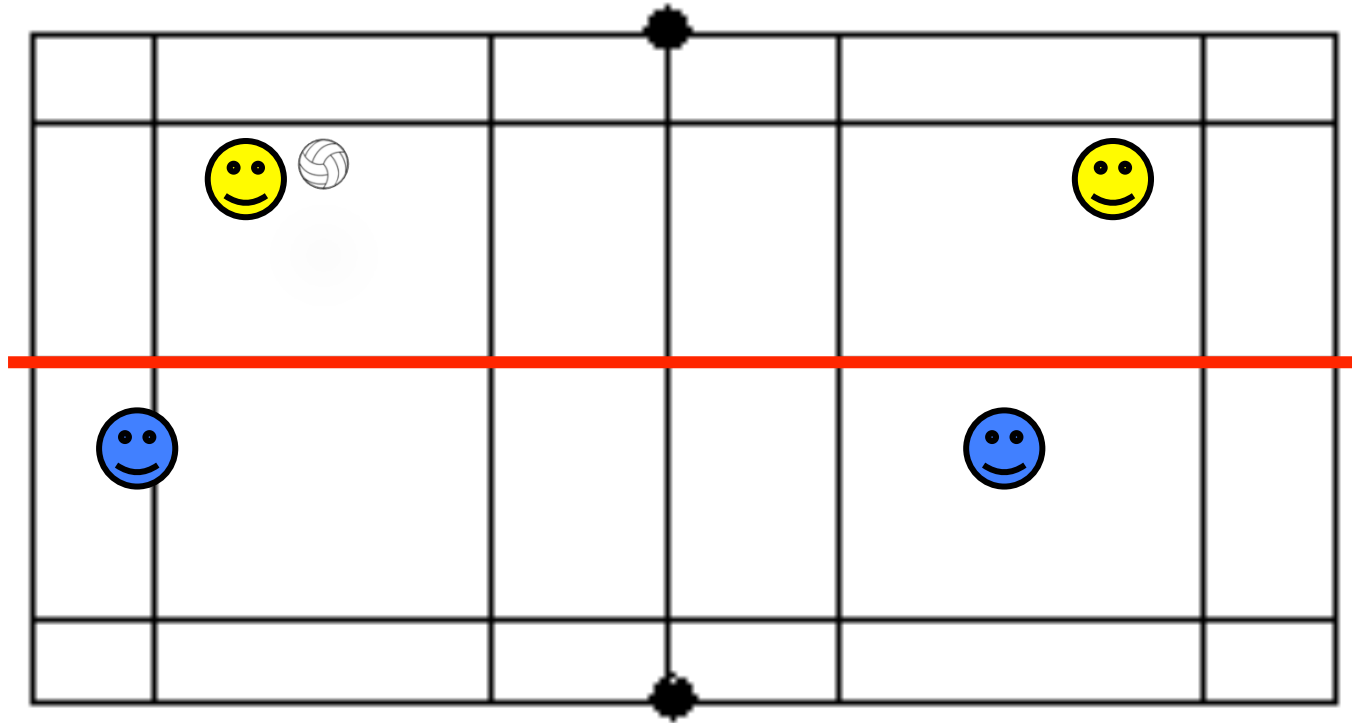


Constraints-Led Invasion Game

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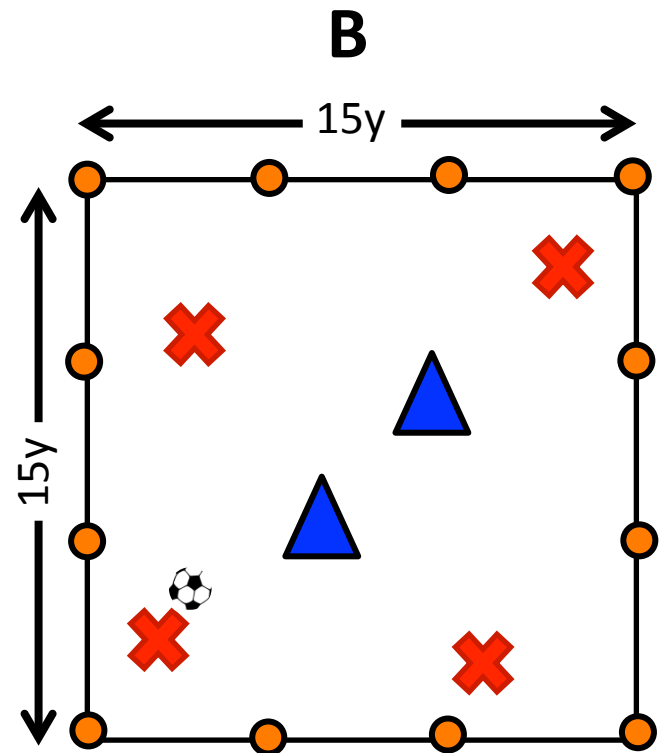
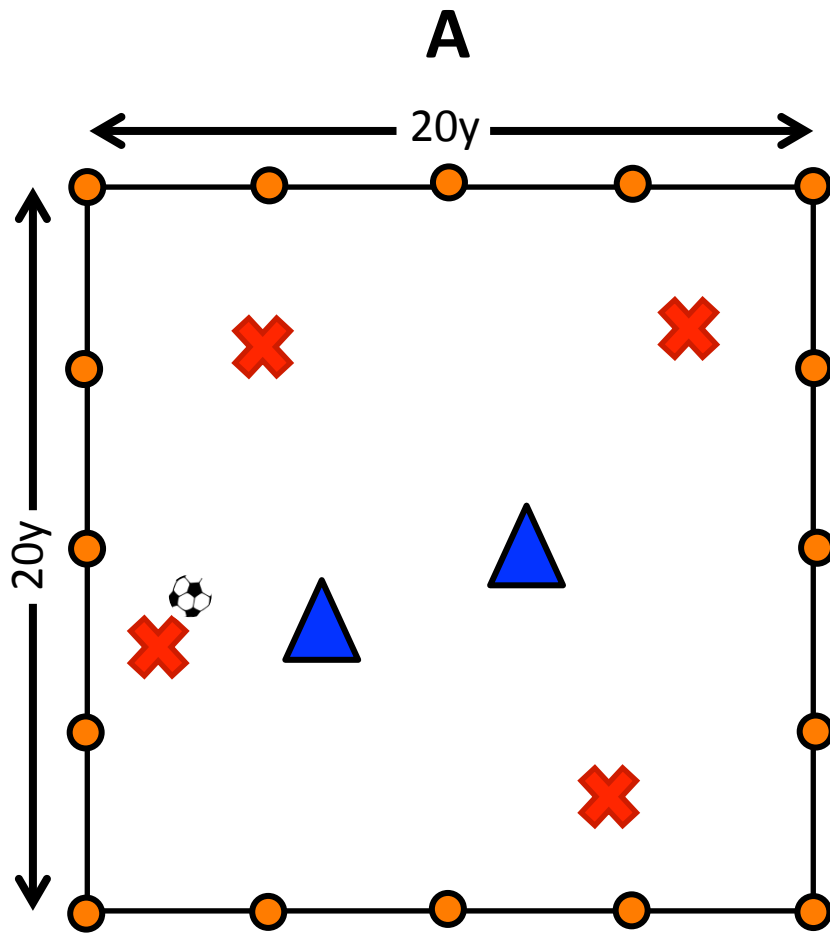


Constraints-Led Net Game

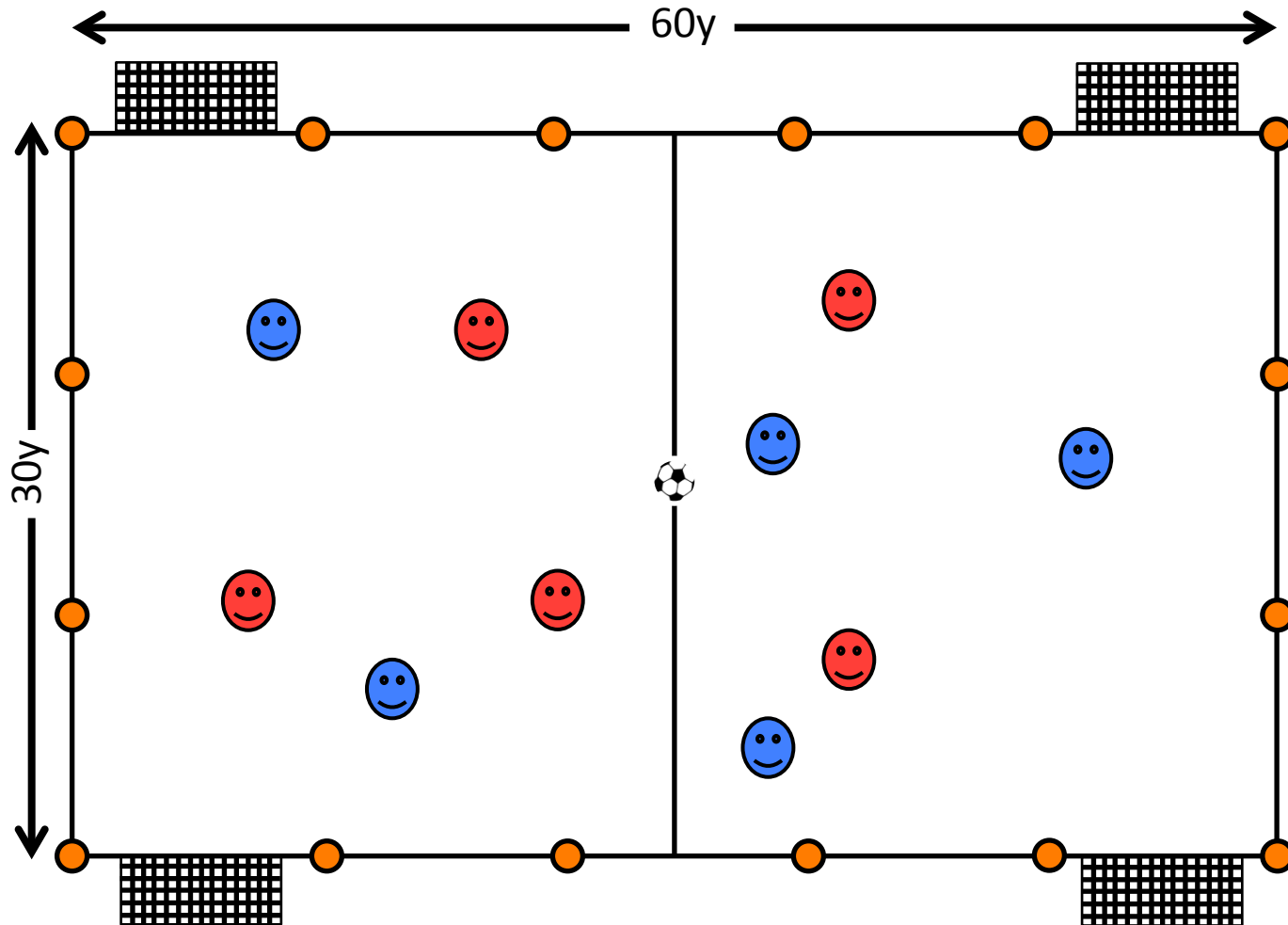


Thin-Long court (constraints) influence gameplay and demonstrate to players the importance the tactical concept

Using Dimensions as a Constraint



Using Shape as a Constraint





Questions? Comments?

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