PRINCIPLES IN TENNIS COACHING

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By the end of this session we will have covered...

• Relationships between the evolution of tennis and tennis coaching
• The influence and importance of Sport Science on Modern Day Tennis Coaching
• How Scientific Principles have been applied to Tennis Coaching
• How is Sport Science Applied and Used during tennis competition and training
Introduction

• The Evolution of Tennis

• How has the game changed?

• The Evolution of Tennis Coaching

• How has the coaching changed?
Principles in Tennis Coaching

• Team / Individual

• Quality / Quantity

• Sport Science / Experience
TEAM / INDIVIDUAL

- Combination
- Individual sport
- Team of people
THE TEAM

- COACH
- DIETITIAN
- PSYCHOLOGIST
- PHYSICIAN
- FRIENDS
- FAMILY
- PLAYER
- TRAINER
- PHYSIO
- STRINGER
- AGENT
QUALITY TENNIS COACHING
COACHING GOING FOR QUALITY

• Quality process

• Involving every single person in the team

• Several functioning components

• Goal: To have a measurable and positive impact on the player
COMPONENTS OF A QUALITY COACHING PROCESS

- Top Coach Commitment
- Leadership
- 100% Player Commitment
- Communication
- Training and Competition
- Measurement and Evaluation
- Recognition and Rewards
I want to be a better coach: What do I need?
COACH COMMITMENT

• Commit their person and their time
• Active: Improve what they do
• Shared: Ensure that others know about it
• Informative: Be able to discuss with others
• Trust: Players and colleagues
• Empowered: Authority = Responsibility
• We do more than just feeding balls!
COACH LEADERSHIP

• Interaction with others
• It can be taught
• It can be learned
• The coach as a role model
• Multidimensional and situational
LEADERSHIP IN TENNIS

Antecedents

1. Situational Characteristics
2. Coach / leader Characteristics
3. Players Characteristics

Behaviours

4. Required Behaviour
5. Actual Behaviour
6. Preferred Behaviour

Consequences

7. Performance Satisfaction

Chelladurai (1978; 1990)

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PLAYER COMMITMENT

• Doing the right things
• Doing the things right
• Taking an active role in the process
• Working as a team
• Setting goals together
• Trying 100% and good behaviour
COMMUNICATION

• Teaching is communicating
• Coach as an effective communicator
• Verbal and non-verbal congruence
• Empathy
• Interaction
RESEARCH: COMMUNICATION IN TENNIS

• More successful tennis coaches (Claxton, 1988):
  – Ask more questions to their players
  – Show more instructional, visual and physical behaviours
  – 75% of time: Play tennis with players, talk to parents, watch in silence, organise players, structure the class...
TRAINING IN AN EFFICIENT WAY

• Use the latest sport science information applied to tennis available.
• Design and implement an adequate training program
• Integration of coaching knowledge and experience together with the scientific basis of sport
EVOLUTION OF THE TRAINING CONCEPT

• Years ago: work stimulus (stress)
  – Improvement resulted from body adaptation to the gradually increased stress (overload)
  – When this work is too excessive, the overload becomes overtraining (burnout)
  – When the work is insufficient, there is little or no performance improvement

• Nowadays: Periodisation

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THE MODERN CONCEPT OF TRAINING

- Training adapted to the match situation
- Individualised training
- Importance of recovery
- Importance of preventive work
- Global / Complex training
- Scientific training
- Use of Technology

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EFFECTIVE COACHING

• Coaches Education is important:
  – Experience of top coaches (France)
  – Practical knowledge of Sport Sciences (UK)
• Commitment from the Coach: i.e. travel
• Coach and player learn and develop at the same time: i.e. Safin, Ferrero
• Recognise different ways to reach the top
• Develop a solid game foundation
PATHS TO THE PRO TOUR

- Normal international model: i.e. France
- Skipping international juniors: i.e. Spain
- College tennis in the US
- From junior direct to Tour: i.e. Sampras, Agassi
- Private strategies (don’t play): Williams
FOUNDATION OF THE GAME

• Firmly established between age of 11-14
• Technique & competitive skills: difference between hitting balls and playing tennis
• Understand the game
• Mind is more important than muscles
SPORT SCIENCE AND TENNIS COACHING
Sport Science & Tennis

• A better understanding of almost all aspects of the game
• Major Scientific contributions have helped the developing of coaching theory and education
• Sport Science has become a major part of Coach Education worldwide
• ITF recommended coaching syllabi - 90+ nations
THE IMPACT OF SPORT SCIENCES

- Medicine
- Psychology
- Physiology
- Methodology
- Biomechanics
- Pedagogy
- Nutrition
- Training
Physiological Characteristics of Tennis (I)

- Approx. 300-500 bursts of energy during the course of a match
- Average point lasts less than 10 sec: predominantly ATP, PCr energy supply
- Players run 4-5 m per stroke and 14 m per point: no more than 4 to 5 steps in one direction
- Mean rest time is 18-20 sec. between points
Physiological Characteristics of Tennis (II)

- Work:Rest ratio in a tennis match is 1:2 variations on different surfaces
- Exercise intensity of a tennis match ranges from 60% - 85% of MHR
- Significant Fluid losses: Sweat rate 0.5 to 2.5 L/hour: importance of fluid replacement
- Benefits of CHO-E beverages on performance
COACHING IMPLICATIONS

- Importance of having a scientific base for the training programmes
- Training to match the nature of the game
- Plan drills in order to respect the physiological demands of tennis
- Importance of warm up, cool down and recovery routines
MODERN DAY COACHING AND PSYCHOLOGY
MENTAL CHARACTERISTICS of tennis (I)

• Individual game
• No coaching allowed
• High percentage of fast decisions
• A lot of time to think during the match
• Don’t know when you start/finish a match
• No substitutes permitted
MENTAL CHARACTERISTICS of tennis (II)

• Knock out competition system
• Different surfaces
• Different continents
• Different types of balls
• The opponent is the umpire
• No off-season
MENTAL CHARACTERISTICS of tennis (III)

• Ranking based on best results during different years
• No time-out decided by the player
• “Silent game”: lots of concentration
• All shots are important
MOTIVATION AND GOALS

• Goal oriented & motivational climate

• Players’ and Coaches’ burn-out

• Motives for playing

• Goal setting
ANXIETY AND STRESS

• Strategies (relaxation, hypnosis)

• Stress and attention

• In juniors

• In singles and doubles
CONFIDENCE AND EFFICACY

- Building self-efficacy
- Self-talk
- Attributions for win-loss
- Thoughts during session
ATTENTION AND CONCENTRATION

• Perceptual and attentional styles

• Concentration skills

• Improving attention and concentration
ANTICIPATION AND VISUAL SEARCH

• Cues in preparing the return of serve

• Visual search & anticipation

• Vision and visual aids

• Timing
VISUALISATION

- Video-modelling
- Audio-visual instruction
- Visual analysis and video feedback
PARENTS

• Perception

• Involvement

• Need more research

• Very important issue at junior level
ROUTINES AND TRAINING

• Warm-up

• Pre, during, and post competition

• Training programmes

• Professional
COACHING IMPLICATIONS

• Coaches are aware of the role of mental factors in tennis

• They are making more use of mental training techniques

• It seems they do not use psychological training enough both on and off court
COACHING IMPLICATIONS

• Coaches may need:
  • More practical evidence
  • More practical procedures both on and off court
  • To work with Sport Psychologists which know the game better
MODERN DAY COACHING AND BIOMECHANICS
RESEARCH ON TENNIS BIOMECHANICS

PERFORMANCE

PHYSICAL STRESS

EQUIPMENT
TENNIS BIOMECHANICS

- Tennis technique analysis
- “No one specific way to hit a ball”
PERFORMANCE: ELEMENTS OF TECHNIQUE

- Efficiency - Economy
- Effectiveness - Result
- Safety - Injury free
Personal interpretation and application of the biomechanics and the technique
GROUNDSTROKES

• Research on forehand and backhand
• Different spins (topspin, slice), stances (open, square)
• Different variations: 1 & 2 handed BH
• Higher participation of all body parts to produce more power and higher racket velocities
IMPORTANT CHANGES

• Dynamic balance
• Stance
• Pre-stretch - elastic energy
• Elbow leading
• Angular momentum - leg drive, hip rotation
• Elbow/wrist for power
• Players discover themselves
ADVANCES IN EQUIPMENT

- Racquets have facilitated the development of more optimum techniques

- Larger balls allow for longer rallies without causing greater load in the playing arm
ADVANCES IN TECHNOLOGY

- Biomechanical analysis: Technical corrections
- Match charting: Tactical corrections
- Computerised training programmes: Physical conditioning
- Visual training
Service & Other strokes

• Different spins: flat and topspin
• Different techniques; foot up & foot back
• Body acting as a linked chain
• Volley: swing, close and far from the net, muscle activation
• Approach shot compared to groundstrokes
# SEQUENCING OF BODY SEGMENTS

<table>
<thead>
<tr>
<th>Body part</th>
<th>Biomechanics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legs</td>
<td>Knees (flexion and extension)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Hip</td>
<td>Hip rotation</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Trunk</td>
<td>Trunk rotation</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Arm/Shoulder</td>
<td>Rotation of arm about the shoulder</td>
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<tr>
<td></td>
<td></td>
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<tr>
<td>Elbow</td>
<td>Elbow extension - forearm pronation</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Wrist</td>
<td>Wrist flexion</td>
</tr>
</tbody>
</table>

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The staircase effect

- Lower arm
- Upper arm
- Trunk
- Hips
- Legs

VELOCITY

TIME

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COACHING IMPLICATIONS

• Many variations of good technique

• Emphasis on effectiveness vs. cosmetics

• Importance of co-ordination, balance and timing to generate power in the stroke

• BIOMECT (LTA)
MODERN DAY COACHING AND METHODOLOGY
INTRODUCTION

- Significant change in teaching methods during the last 20 years
- Based on research done in tennis and in other sports
- Importance of the player involvement, understanding the game
TEACHING STRATEGY IN THE OLD METHODS

• Technique was the priority

• Tactics were taught when the player was able to master the technique

• Matches were played when players were able to rally consistently
USE ONLY OF ANALYTIC METHODS FOR ALL PLAYERS

CLOSED SITUATION

OPEN SITUATION
TEACHING STRATEGY IN THE NEW METHODS

- The priority is PLAYING THE GAME (GAME BASED APPROACH)
- Technique and tactics should be taught at the same time
- Matches should be played as soon as possible
- Technique is taught to better implement tactics
OPEN SITUATION

CLOSED SITUATION (drills)

USE OF ANALYTIC METHODS IF NEEDED (technical training)

GLOBAL METHODS (e.g. mini-tennis)

GLOBAL METHODS

OPEN SITUATION (match)
<table>
<thead>
<tr>
<th>Teaching approaches</th>
<th>The players</th>
<th>The learning process</th>
<th>Class organisation</th>
<th>Dealing with group &amp; players</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Old approach</strong></td>
<td>All players learn the same way. The coach teaches everyone in the same way</td>
<td>No attention to the different stages of learning</td>
<td>Based on using line formation</td>
<td>All players in the group doing the same task at the same level of difficulty</td>
</tr>
<tr>
<td><strong>New approach</strong></td>
<td>Each player learns differently</td>
<td>The are different stages of learning that should be respected</td>
<td>Based on using buddy teaching, task assignment</td>
<td>Individualisation &amp; inclusion. Adapt the task to the characteristics of each player</td>
</tr>
<tr>
<td><strong>Conclusions</strong></td>
<td>Understand kinesthetic, visual and auditory learners</td>
<td>Be aware of cognitive, repetitive and automatic stages of learning</td>
<td>More activity and independence, less control</td>
<td>Possibility of working individually within group lessons</td>
</tr>
</tbody>
</table>

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IMPLICATIONS FOR COACHING

• Use a more player centred learning strategy
• Use drills with more tactical intentions
• Create a positive learning environment:
  – Strengths vs. Weaknesses
  – Positive reinforcement
  – Command vs. Guided Discovery
MODERN DAY COACHING AND PEDAGOGY
A Pedagogical Model

- Starting point
- Evaluation
- Goal-setting
- Training
The (actual) starting situation

• **Possibilities / Opportunities:** Player’s options.

• **Limitations / Weaknesses:** Be aware.

• **Weapon / Strength:** ‘lethal’, Gaining (many) points.
Goal setting

- Short term and long term.
- Make sure the goals link to the ‘starting situation’.
- Performance and outcome.
- Sub-goals.
Training

• Should be ‘gamelike’;
• The purpose (goal) should be clear;
• ‘Load’ should be related to the goal;
• ‘Objective’ and measurable results are highly motivating
Evaluation

- Can build up selfconfidence;
- Should be positive but realistic;
- Performance and/or outcome;
- Match analysis;
- May lead to new goals.

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MEASUREMENT AND EVALUATION

• Importance of tests

• Use of Sport Science

• Share results

• Learn from experience
RECOGNITION AND REWARDS

• Important for players

• Keep motivation

• Avoid extrinsic rewards as much as possible
CONCLUSION

• Principles in tennis coaching will help coaches to help players

• Ultimate goal: THE COACH AS FACILITATOR OF THE LEARNING PROCESS