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Applied Integrated training on-court - specific case studies: Is it a methodology of the future?

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ABSTRACT

This paper discusses integrated coaching, an approach which stems from the theory that expert performance is predicated on the different game aspects (physical, psychological, technical and tactical) being used instinctively and together by the athlete, and that therefore the best way to create expert skills and performance is to train these aspects together. Practical examples and case studies are discussed.

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INTRODUCTION

The difference between the best tennis players and all others is discussed by many coaches, players and parents every day. The findings of certain studies (Schönborn 1984, 1994, Unierzyski 2011) define coordination-agility-speed, power, tactical-technical skills and mental features as the most important factors affecting (limiting) performance in tennis. Research also show that top players possess very high and aligned (without major gaps) level of all these factors already from the junior age.

Respecting these findings we like to look at successfulness in tennis from a slightly different perspective and draw up conclusions for practice. Looking a bit deeper and from a game point of few (using game based philosophy) the performance of very best players can be described as follows:

- They make high % decisions
- They hit the ball with "sufficient" power and a high degree of precision,
- They have a clearly defined game style with specific game patterns and favourite combinations of shots)
- They have "weapons" and super strengths
- They have great anticipation skills
- They are also able to improvise when necessary, make unorthodox decisions and execute unorthodox shots. In essence they have great adaptation skills
- They can play all 3 phases of play well, knowing when and how best to attack, rally, defend and counter attack

Developing Pierre Bourdieu's theory and the game based approach / tactical approach to coaching, we can explain that the real champions are able to instinctively connect tactical decisions, fluent technique and shot precision into one effective process in such a way that the reactions become automatic (Bourdieu, 1990; Crespo and Cooke, 1999). They are able to use all skills specific to the game (technical, physical, coordination and mental) together, at the same time, so they support each other. This skill, a combination of "Instinct" and "complex" skills, can be called a "super competency" or, from Bourdieu, "habitus".

There are also many statements that suggest that separation between mental, physical and tactical-technical training on a high performance level is a "more artificial than natural" (Crespo and Reid 2002). It is logical that if all these different skills have to work together, players and coaches should work on them integrated way as much as possible.

The question is: how to do it, how to teach it, and how best to make our players learn and develop?

Some coaches still work in a traditional way using methods which are not game specific, and are therefore in separation.

The classical example are:

- Physical training
  - Using long distance running – to create an "aerobic base" as major methods recommended for all levels of players.
  - Working on "general flexibility" or strength in a gym only.
- Mental preparation - working with players in their offices – away from a real match situation
- On court training - using closed drills as main tools to develop tactical and technical skills.

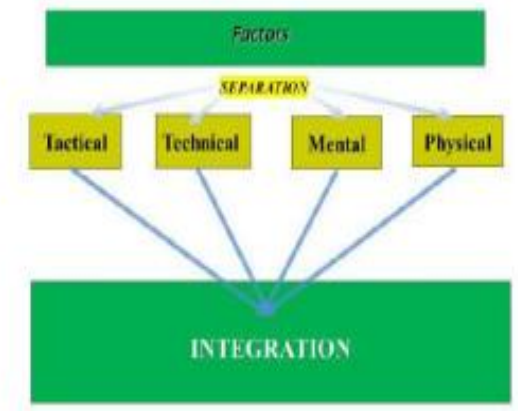

Figure 1. Different aspects of coaching tennis and integration for a holistic approach.

Using methods taken from track and field or personal training without respecting the "model" of the game leads to improve allround fitness but usually will not help players much to improve on court performance. The same or better result can be reached through specific on court practice, and when experts/coaches from different fields (physical, mental, technical-tactical) work together on court.

Recently, we can observe that traditional, conservative teaching methods are being enriched by new ones. The efforts of leading coaches go into adapting training methods to the specific demands of the game more than before - the concept of integrated coaching is more and more accepted.

The final goal of such approach to coaching is to teach players to be able to connect tactical decisions, fluent technique and shot precision instinctively. To achieve this, modern coaches use more complex drills to consolidate and integrate mental and physical preparation with technical and tactical skills. Integrated training allows the knowledgeable coach to better choose cocktails of exercises individually designated to players' needs while maintaining specific energy regimes specific to the game.

The whole process starts from deep analysis of players performance in open situations. Match statistics might be a good point to start from, but ideally the reason for better or worse performance should be investigated deeper. For example, the reasons for better or worse performance may be:

- Mental (e.g. attitude, poor focus, emotional control, lack of motivation)
- Physical (core stability, power, strength, speed)
- Tactical (e.g. how to play game effectively against a lefty, patterns, decision making etc)
- Technical
  - Reception skills (Racket work, body work and footwork)
  - Sending skills (Racket work, body work and footwork)

So we start from a mental aspect, e.g. attitude, then tactical (what was your plan?), followed by physical and technical analysis. The Observation/Analysis & possible intervention should take into account all 4 performance factors. It is important to coach in collaboration with the athlete using e.g. leading questions to assess the player in a specific game situation. After this, the training goals and a training plan for a player have to be set up.

This might be best illustrated with real life examples of players who have raised the level of their game dramatically.

CASE STUDIES

Example Nº 1

An elite (WTA) player ranked below 400 with aspiration to get into top 100.

- Relatively small (no big weapons)
- Great attitude, work ethic
- To be more efficient she has to play more aggressive, baseline game so her opponents will run more and make more errors.
- Mentally and physically she has to be run more quickly and ready to play long rallies and matches.
- Must be able to play rallies with 8-10 shots or more (so above the average for women tennis) with higher speed and great precision and to "kill" opponents with a stamina, high tempo and precision of base-line game.
- Furthermore she has to able to play 4-5 matches in a week, on the same level, which means she has to be able to recover quickly.

So her tennis-specific speed and endurance (which are contrasting to each other) has to be better than her opponents, and movements more economical in order to out-rally and out-last her opponents, and finally be able to play the whole tournament, not just 1 or 2 matches.

According to traditional coaching methods, she should run a lot outside the court in order to develop aerobic base and use gym to make her body stronger and to work on her tactical and technical skills separately, in isolation from strength and conditioning.

Instead of this she has enriched her program and included one or two sets of integrated training per week into her regular on-court practise.

Example:

- Series of 6-8 blocks, each consists of one strength and conditioning exercise followed by tennis drill (closed or more open depending on the training goal):
- Practice directed to develop specific "tennis" speed and power :
- 6-10 seconds S&C exercise followed by tennis drill lasting 6 to 10 shots
- Practice directed to develop specific endurance/stamina
- 10-20 seconds exercise followed by tennis drill lasting 12 to 18 shots

Each block is followed by a break until phosphocreatine recovery.

Such practice must be followed by practice match.

The whole practise should be challenging but not extremely tiring (lactate acid between 6-8 millimoles)

- Allows to shape all parameters (factors limiting performance) in very short time
- Speeds up the training process
- Saves time

It is crucial to teach proper movements technique prior working on speed and desired dynamics.

Results of such practise:

Maximal Oxygen uptake (Vo2 max) raised up to 59 ml/kg/min –action and running speed also raised (without any conventional long distance or interval training).

Also, the player confessed:

"*I was not able to win more than two matches in a row.*"

"*I do not know that has happened to me but….I am much quicker, fitter, more dynamic and play much better.*"

"*I have won 13 matches, many in 3 sets - after only two months of such practise.*"

"*I have moved from 600 to 180 WTA in a very short time.*"

"*The longest rally I have won lasted over 45 shots !!!) – my opponent "died" but I was able to play normally after this.*"

It does not mean that she never has to go the gym, but she doesn't have to use long-distance running to improve her endurance.

Example Nº 2

11 year old elite player (top 3 in Poland)

Training goals:

To develop basics of an all-round, offensive-game style; be able to make the opponent run using both grounds strokes; and, improve emotional control through learning on court routines

Example:

- Series of 6 blocks, each consists of one specific "tennis" speed/agility lasting 4-6 seconds, followed by tennis closed drill (Series of 4 - 5 -6 – 5 - 4 shots shorter crosses into targets performed with moderate intensity)

- This Followed by a break until full recovery (pulse rate below 90 beat per minute)

- The player has to show routine behaviour after each tennis drill.

This is followed by 20 minutes practice match (e.g. super tie break),

With example 2, it is important to note that young players before puberty are not ready to withstand high intensity anaerobic type exercises so all drills must be shorter based on the use of the phosphocreatine system as the main source of energy, i.e. drills are challenging but not extremely tiring. When doing drills ensure there is a high amount of challenge with a high amount of support.

CONCLUSION

One of the advantages of these practices (in both examples) is that the body, when working under challenging conditions, starts to perform in a more economical way. Observation shows that some unnecessary muscles "switch off" and only the most important ones, responsible for performing a given technique, works more fluently. As a result the technique and even shot precision increases together with specific speed/power and endurance.

The resultant behavioural change is also relatively long lasting, and it is also enough to perform this type of session once per week within a normal but structured training programme in order to elicit positive adaptations.

Integrated practice or training should be seen as a more effective way to transfer more general abilities (mental, physical and coordination) into tennis-specific skills. It also allows for greater consolidation and integration of all performance parameters/ factors (factors limiting performance) in a shorter amount of time and in a more complete way which arguably means that you'll create a more complete player. It speeds up the training process which means that players see results faster and may be happier about their progress as a result, and can also dedicate more time to other essential activities including injury prevention. This type of training might also be the next step in the player centred approach as it implies coaching in a more holistic way, putting the 'person' first, before the 'player'.

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