

Pg.	Title / Author
2	Editorial
3	Coach-player communication: What, why, when and how? Janet Young (AUS)
5	Social media, learning, networking and promotion opportunities for tennis coaches Mauricio Cordova (ECU)
8	The specific nature of endurance training in tennis David Suárez y Josep Campos Rius (ESP)
11	Psychological factors related to choking under pressure Takehiro Iwatsuki (JAP) , Judy Van Raalte (USA) , Britton Brewer (USA) , Albert Petitpas(USA) and Masanori Takahashi (JAP)
13	Muscular imbalance and their effect on the health of the tennis player: Assessments of explosive strength in the lower limbs by means of jumps Javier Villaplana Velasco and Cristina Blasco Lafarga (ESP)
15	Is there a relationship between junior and senior tennis success? Michael Bane, Bruce Elliott and Machar Reid (AUS)
18	Helping junior tennis players to cope with their emotions Camilla Knight (GBR) , Francesca Lewis (GBR) and Stephen Mellalieu (GBR)
21	Enjoyment: Fresh clues for coaches Janet Young (AUS)
24	Tennis player development: From junior to professional transition stage Pancho Alvaríño, José Altur and Miguel Crespo (ESP)
27	The evolution of online education for sports coaches: A tennis perspective Richard Sackey-Addo (GBR) and Javier Perez Camarero (ESP)
29	Recommended e-books Editors
30	Recommended web links Editors
31	Guidelines for submitting articles to ITF Coaching & Sport Science Review Editors

The Official Coaching and Sport Science Publication of the International Tennis Federation

EDITORIAL

Welcome to issue 68 of the ITF Coaching and Sport Science Review, the first issue of 2016. The articles in this issue cover a variety of tennis specific topics including; the transition from the junior to professional game, the growing opportunities for coaches available through social media, coach-player communication and endurance training in tennis.

Following the recent election of Mr. David Haggerty as ITF President, the ITF Development Department now forms part of the newly-created Development and Integrity Department, under the leadership of Stuart Miller with Luca Santilli as the new ITF Executive Director of Tennis Development. On behalf of the ITF, we wish Stuart and Luca all the best in their new roles.

The ITF Coaches' Commission also welcomes a new chairman and members, elected by the ITF Board of Directors. Aleksei Selivanenko (RUS) will now be assuming the responsibility of Chairman with the new members of the Commission for 2016/17 including: Alfredo de Brix (PAR), Martin Blackman (USA), Dr. Janet Young (AUS), Fernando Segal (MEX), David Sanz (ESP), Hichem Riani (TUN) and Wei Zhang (CHN).

2016 marks another year that the biannual ITF Regional Coaching Conferences return. The Conferences, sponsored by BNP Paribas, form an important part of the ITF's Coach Education Programme and, as always, will be featuring high calibre international experts presenting some of the latest advancements in the physical, tactical, technical and psychological aspects of tennis. For more information on the conferences please see [here](#).

World leading researcher and sports biomechanics expert Professor Bruce Elliott was honoured at this year's Australian Open with the 2015 ITF Award for Services to the Game in Coaching. The award reflects Bruce's outstanding contribution in the field of coach education/tennis coaching research which is further exemplified by his regular presence at international workshops, conferences and courses. The ITF would like to congratulate Bruce on his achievement and wish him every success with the continuation of his excellent work.

The ITF have commissioned Mississippi State University to lead a research project titled 'The Impact of Tennis Participation on Parameters of Health'. The research will study the relationship between active tennis players, non-tennis players and the associated health benefits.

In order to compile data for the research study, volunteers are asked to complete an online survey and to respond to questions regarding demographics, tennis history, health status, exercise, and general satisfaction with life. If you are interested in participating in this



research study, please see this website. Additionally, it would be very much appreciated if you are able to share this with your own distribution lists ie, tennis club members, family, friends or other coaches.

ITF Tennis iCoach published more than 150 pages of new content in 2015, including conference presentations, video tutorials, sport science articles and presentations from various national coaches' conferences including exclusive presentations from November's ITF Worldwide Coaches Conference by BNP Paribas. So far in 2016, keynote presentations by: Beni Linder, Judy Murray, Gabe Jaramillo, Doug MacCurdy and Miguel Crespo and David Sanz have been published on the website. The exclusive content offered from the conference has proven to be popular with members, most notably Beni Linder's video which has amassed over 150,000 views on the website and via the Tennis iCoach Facebook page and has generated over 8,000 likes, comments and shares. Presentations by other keynote and workshop speakers will soon feature on the website from the 2015 ITF Worldwide Coaches Conference by BNP Paribas. You can view all of these presentations and register for Tennis iCoach membership [here](#).

We hope that you will find this 68th edition of the Coaching and Sport Science Review informative and that it will allow the global community of coaches to continually enhance their coaching competencies and to be more effective in their work as tennis coaches developing more and better players. We also hope that you will continue to make use of all the other coaching resources provided by the ITF which can be viewed on the coaching webpage.

www.itftennis.com/coaching

Luca Santilli
Executive Director
Tennis Development

Miguel Crespo
Research Officer
Tennis Development/Coaching

Richard Sackey-Addo
Assistant Research Officer
Tennis Development/Coaching

Coach-player communication: What, why, when and how?

Janet Young (AUS)

ITF Coaching and Sport Science Review 2016; 68 (24): 3 -4

ABSTRACT

This paper reviews the critical skill of communication and addresses the what, why, when and how of effective communication. Using the illustration of Andy Murray and his previous coach, Ivan Lendl, this paper proposes that coaches can take a proactive approach to develop and nurture effective communication that leads to mutually rewarding outcomes for coach and player.

Key words: communication, coach, player

Corresponding author: janet_young7@yahoo.com.au

Article received: 15 September 2015

Article accepted: 08 January 2016

INTRODUCTION

“He’s made me learn more from the losses that I’ve had than maybe I did in the past. I think he’s always been very honest with me. He’s always told me exactly what he thought. And in tennis, it’s not always that easy to do in a player/coach relationship. The player is sometimes the one in charge. I think sometimes coaches are not always that comfortable doing that. But he’s been extremely honest with me. If I work hard, he’s happy. If I don’t, he’s disappointed, and he’ll tell me. And, yeah, when I’ve lost matches, last year after the final he told me he was proud of the way I played because I went for it when I had chances. It was the first time I played a match in a Grand Slam final like that. He’s got my mentality slightly different going into those sorts of matches.” (Andy Murray about his coach, Ivan Lendl, 2013).

After capturing the 2013 Wimbledon Men’s Singles Championship Andy Murray paid glowing tribute to his then-current coach, Ivan Lendl, as an outstanding mentor and communicator. It was evident that their professional relationship was based on respect and trust. It was a relationship in which the coach was honest and acknowledged his player’s strengths, achievements and efforts. This illustration of a coach-player relationship serves as a reminder to coaches that to succeed in their profession they must be effective communicators. However, merely reminding a coach to ‘*communicate effectively*’ is like a school teacher telling a student to study for a test without providing guidance as to how and what to study. To be an effective communicator, a coach must have a full and clear understanding of the objective of communication, what should be communicated and how and when to best do so. These issues relating to the ‘*what*’, ‘*why*’, ‘*when*’ and ‘*how*’ of effective communication will now be explored together with some tips for coaches who are keen to optimise this critical skill.



COMMUNICATION DEFINED

‘*Communication*’ is “a multifaceted phenomenon that involves the transmission or exchange of thoughts, ideas, feelings, or information through verbal and non-verbal channels” (Yukekson, 2010, p.187). Building on this definition, effective communication involves mutual sharing and understanding. It is a dynamic two-way process when individuals connect in a meaningful way. As such, effective communication between a coach and player goes beyond merely talking and listening. Rather, it implies that the challenge for a coach is to ensure that their player feels like the only, or the most important, person in the world!

Purpose of communication

Coaches communicate with players for a number of reasons (Weinberg & Gould, 2003) including to:

- Persuade
- Evaluate
- Inform
- Motivate and inspire
- Solve problems

Several purposes may be involved in any single communication. For example, a coach may use motivation and persuasion to convince a training squad as to the benefits of a new program and then inform them of the program’s details.

Types of communication

Communication includes not only verbal (spoken or written) content but also nonverbal cues known as body language (e.g., facial expressions, body positioning, signals, gestures, voice intonations etc.). It is estimated that as much as 50% to 70% of all communication is nonverbal (Weinberg & Gould, 2003). This estimate has significant implications for coaches who may be unaware, or forgetful, of the information they are imparting with facial expressions, hand gestures and tone of voice for example. There is good reason for the well-known adages, “*it’s not what you say but how you say it*” and “*a picture tells a thousand words*”!

When and where to communicate

Interestingly, communication is always occurring. As explained by Burke (2010), “*We cannot not communicate. Whether or not we speak, gesture, acknowledge others, or return emails and text messages, we are communicating*” (p. 315). Many communication avenues are now options for coaches and players (e.g., mobile phone, email, instant and text messaging, Facebook, Twitter, blogs etc.). One possible drawback of engaging in the current technological communication boom is that coaches are ‘*on call*’ 24 hours!

Understanding a player’s personality and circumstances can guide a coach as to when, and where, coaches and players might exchange thoughts, advice and/or feedback. As a general guide, feedback is

best provided at the time or shortly after an action, event or activity (Burke, 2010). However, some players prefer to take time out after a difficult loss or training incident/session and, for these players, delaying constructive feedback from the coach may be a sound approach. In terms of where to communicate, it is generally advisable to seek face-to-face contact in a quiet place away from distractions (Anshel, 2003). This however will depend on the circumstances at the time.

How to communicate effectively

A central principle of effective communication is to seek first to understand the individual, then seek to be understood (Covey, 1990). To this end, here are some general suggestions for coaches:

- Devote time to know to get to know a player – gain sufficient information (e.g., tennis background and goals) to enable a sound understanding of that player’s perspective on learning the game. Listen attentively to what a player wants and his/her issues and suggestions.
- ‘*Be present*’ at all times and give a player your full attention. This involves direct eye-to-eye contact if in the presence of a player.
- Treat each player as unique - no two players are the same (e.g., different reasons for playing the game, different personalities and abilities). Tailor your approach to the individual’s need(s) but remember that prioritising a player’s well-being and enjoyment of the game should be common to all players.
- Take a genuine interest in a player and how you can best help, guide and mentor them. Adopt a ‘*partnership*’ approach where both the coach and player build on each other’s strengths towards a mutually agreed goal.
- Adopt an ‘*open door*’ policy but also proactively contact a player for discussions and, particularly, if you suspect there are pressing or outstanding issues.
- Show and share your passion for the game – be enthusiastic but realistic, practical and honest in what you say and do. Be a role model and mentor and lead by exemplary actions. Be positive and provide constructive comments and feedback highlighting what is being achieved and what might still be possible for a player to achieve.
- Know your trade - keep updated with professional development activities and be clear and fully conversant with what you want to share with a player. Clear thoughts make for clear messages!
- Be mindful that, to a large extent, coaches set the tone, atmosphere and environment. Coaching needs to be a place where a player wants to be and feels comfortable, appreciated and respected. Do not take this responsibility lightly but rather ensure your engagement with a player and their support group (e.g., parents, partners) is of the highest standard.
- As a general guide, treat each player in a manner that you would like them to treat you. A good sense of humour and a smile generally go a long way!

Interested coaches may wish to refer to (Egan, 2010), (Murphy and Murphy, 2010) or (Young, 2006) for further suggestions for improving one’s use of the ‘*micro skills*’ of communication (e.g., active listening, paraphrasing, open-ended questioning, giving feedback etc.).

CONCLUSIONS

There are different ‘coaching styles’ but all good coaches are effective communicators who adopt a range of strategies – developing mutual trust, empathy and understanding, actively listening, providing positive feedback and being honest and consistent – that keep players optimally engaged in the game. It is not an easy task for any coach but one that undoubtedly requires a coach’s on-going full attention and commitment. The reward for coaches and players who

consistently communicate effectively is knowing that, together, they have both achieved something very special. Just ask Andy Murray and Ivan Lendl and also the tennis community who witnessed Murray’s memorable 2013 Wimbledon triumph.



REFERENCES

- Ansel M. H. (2003). Sport psychology: From theory to practice (2nd ed.). Scottsdale, AZ: Gorsuch Scarisbrick.
- Burke K.L. (2010). Constructive communication. In S. Hanrahan & M. Anderson (Eds.), Routledge handbook of applied sport psychology: A comprehensive guide for students and practitioners. New York: Routledge, 315-324.
- Covey S.R. (1990). The 7 habits of highly effective people. New York: Simon & Schuster.
- Egan, G. (2010). The skilled helper. Thomas Brooks: Belmont, CA.
- Murphy S.M. & Murphy A.I. (2010). Attending and listening. In S. Hanrahan & M. Anderson (Eds.), Routledge handbook of applied sport psychology: A comprehensive guide for students and practitioners. New York: Routledge, 12-20.
- Weinberg R.S. & Gould D. (2003). Foundations of sport and exercise psychology (3rd ed.). Champaign, IL: Human Kinetics.
- Young J.A. (2006). Keys to Effective Communications with Players. *ITF Coaching and Sport Science Review*, 38, 3-5.

RECOMMENDED ITF TENNIS COACH CONTENT (CLICK BELOW)

Tennis*i*Coach

Social media, learning, networking and promotion opportunities for tennis coaches

Mauricio Córdova (ECU)

ITF Coaching and Sport Science Review 2016; 68 (24): 5 -7

ABSTRACT

This article examines three trends that will shape the future of social media. From these innovations, five practical tools addressed to coaches with little experience in the use of social media are proposed. These resources are focused on the promotion of clubs or academies and professional career development through networking and self-learning. The latest innovations and trends in social media will be explored and from this, five recommendations for utilisation by tennis coaches will be proposed.

Key words: social media, promotion, new technologies, career development

Article received: 05 October 2015

Corresponding author: mauc875@gmail.com

Article accepted: 10 January 2016

INTRODUCTION

Nowadays, social media has transformed from being a simple space for entertainment, to becoming a meaningful resource for companies and organisations that seek to establish closer relationships with their groups of interest. Tennis is not alien to this reality, for coaches and academies are increasingly taking advantage of social media as a means of promotion and dissemination of knowledge.

A key element to understanding the current situation on social media is the new communication paradigm. As suggested by Weinberger, Locke, Levine, and McKee, (2009) it is suggested that communication ceases to be unidirectional to be transformed in a conversation where human and direct language prevails. A second characteristic is the fast level of innovation in the operative systems as well as in the mobile devices that have permitted a higher number of users to be interconnected.

CURRENT TRENDS IN THE USE OF SOCIAL MEDIA

The revolution of mobile devices

The abundance of smart phones and tablets is current markers is increasingly high. Kemp (2015), showed that internet traffic produced by fixed devices (laptops and desktops) has decreased 13% and hence, mobile devices now account for 38% of overall web traffic. In this sense, Kemp (2015) and Bullas (2015) emphasised that around 29% of the world's population has at least one active social media account. It is estimated that currently 79% of these users, roughly equating to 1.65 billion people, are accessing these applications through mobile devices. Moreover, to note the level of dependency on such mediums, on average 17% of social media users check their devices for three or more hours per day (Cooper, 2013). The boom and consolidation of instant messaging through applications such as WhatsApp, Telegram or Snapchat also suggests the rise of a new era in the use of social media.

A wide variety of resources

The level of diversification on social media networking sites keeps growing. Although Facebook remains as the largest platform worldwide with almost 1400 million users (Bullas, 2015), other tools do also present an immense potential.

LinkedIn, for example, makes it possible for coaches to interact with National/International Associations and sporting bodies, as well as other coaches and professionals from around the world. This business-oriented social networking service is primarily beneficial in supporting professionals with further career opportunities, offering professional services and facilitating discussions with experts in various fields. It is estimated that each second, two new users log into this social media site (Cooper, 2013).

YouTube closely follows Facebook in terms of the number of active users in the world. To gain an insight into its impact, (Cooper, 2013) highlighted that in the United States this platform has higher audience levels than any TV cable channel amongst young people



between 18 and 34 years old. Although most of the uploaded content on this YouTube is entertainment oriented, its potential as an educational tool for sharing knowledge has often been disregarded. From a tennis coaching perspective, this platform may seem quite attractive given the comprehensive amount of free available resources such as tutorials, speeches, and point sequences among others.

Another social networking site that has gained mass amounts of popularity over the last few years is Instagram, an online mobile photo/video-sharing platform where users can upload and share high quality images and other visual resources on various social network websites. Lunden (2014) points out that this site grew in 2014 more than any other social media outlet with an almost 23% growth. YouTube and Instagram are quite relevant as the current contents trends suggest that most of the conversations on social media no longer solely depend on traditional or written communication forms. Ayres (2014) estimated that at least 87% of shared contents on Facebook was the result of a good image. Moreover, Codefuel (2015) forecasted that in 2017, nearly 74% of the overall traffic on the internet will be generated from videos.

Group interactions

According to the new communication paradigm, it is becoming increasingly more frequent that dynamics of interaction are becoming more granular, meaning individuals are now seeking more compact and homogenous groups where common interests and values can be met. For instance, the group "Tennis Industry Network" on LinkedIn gathers more than 9,000 experts on tennis worldwide, most of them active professionals in the field. Stets y Burke (2000) argued that a key factor in this new networking approach is that individuals in a group would identify themselves more openly in spaces where they could perceive a positive self-image. Therefore, the closer the relationship between a group and a person is, the greater the disposition to participate and interact.

FIVE BASIC TOOLS FOR COACHES BEGINNING IN SOCIAL MEDIA

From the trends that have just been outlined, five basic tools are presented for coaches that can be used in order to take advantage of these resources as a means of promoting local activities, as well as to continually develop a professional career in tennis.

Start with a Facebook group for your club or academy

Currently, Facebook offers three types of accounts: personal pages, public pages and groups. For clubs and academies that are being promoted for the first time, it is highly advisable to start by means of a group page approach. The main advantage of this feature is that it permits more contributions by group members as it is possible for them to directly post photos, videos and other files.

Recommendations:

- When opening a group, clearly set the privacy levels by keeping control of the type of group; whether it can be public, open or secret, and any restrictions you would like to put on the posts of the members.
- It is paramount to state a detailed description of the group and to choose an appealing page photo that at a first glance will clearly portray who the group are and their main purpose/s.
- The posts should not be repetitive and, if possible, they should be visually attractive. Be sure to take advantage of the events tool when a course, exhibition, tournament, ranking event or any other activity takes place on your club.
- Keep in mind that the group updates when a new entry or comment has been posted and goes directly to the notifications section in members' personal pages. Thus, excessive and irrelevant posts may decrease the interest in the group.
- An active group with a good level of content can be time consuming. If you are willing to accept this challenge as group administrator, you should be ready to respond as soon as possible to comments and questions from group members.

Improve your designs with these free online resources

Visual content is a fundamental component in social media. To create posters, banners and infographics, we advise you to use the following resources which might be helpful when, for instance, organizing a local tournament or any other activity at your club:

Visual content is a fundamental component in social media. To create posters, banners and infographics, the following resources may be helpful when, for instance, organising a local tournament or any other activity at your club:

Images: <https://www.canva.com>

Infographics: <http://www.easel.ly>

Recommendations:

- Try to be consistent in the colour patterns used towards defining a corporate line to your club and hence to your page.
- Bear in mind that currently, most of the content on social media are being spread through mobile devices. With these design tools it is possible to adjust or adapt the sizes to these types of formats.
- As the saying goes, an image is worth one thousand words. One of the keys for posting good content is to have a wide and rich photo base. Be sure that there is always photographic evidence of the important moments at your club. The quality of pictures is also decisive so do not feel the need to spare any expense when investing in a good camera.
- Post weekly rankings, an interesting statistic or advice from a successful coach or player.

Start producing your own videos

Creating and editing videos is much simpler than it actually looks. Although YouTube is an endless source of information and

entertainment, not many users use this platform to generate their own content. A recommended tool for creating these types of contents is the YouTube editor itself (<https://www.youtube.com/editor>).

Recommendations:

- Be sure to always name your videos with an appealing name, labelling them with key words that would permit other users with similar interests to find your clip. Do not neglect the huge potential of this social networking site. Just imagine that if YouTube was a nation, it would probably be the third largest in the world behind China and India!
- It is possible to include free copyright music in your videos with this editor. Do not forget to pick a good soundtrack to enhance your clip.
- It is highly advisable that the video should be shorter than one minute.
- Combine your clip with images and text. Besides if you wish to widen your audience, YouTube editor permits you to add subtitles in other languages automatically.
- In this link you may find a quick tutorial on how to edit your first video: <https://www.youtube.com/watch?v=ZYK2p7MZQqw>



Strengthen your career path on LinkedIn

This suggestion is rather focused on improving your professional image in the tennis industry as a coach. Through LinkedIn, you will be able to expand your network with other experts in the field as well as taking advantage of calls, working opportunities and new learning resources that may contribute to your professional development.

- When creating your account, only include relevant information that supports your current professional exploits.
- A clear and professional photo is fundamental as well. As in a real CV, this will be the first impression you are going to project.
- Be sure to follow LinkedIn pages of tournaments, clubs, academies and National Federations where courses and working opportunities are often published.
- As this is a professional network, politeness and your language style is highly important. Carefully select the information you are sharing or posting and avoid making spelling mistakes.

Take part actively in tennis groups

Jenkins, Ford and Green (2013) stress that belonging to a group or network means to have a mutual power, foundation of the so-called "participatory culture". Thus, one of the main principles when venturing into the world of social media is that the best approach to interact is by sharing.

Recommendations:

- Contributing actively in other groups is an excellent strategy to promote yourself as a coach and at the same time to spread the services of your club or academy.

- It may be encouraged for you to propose topics of discussion for group members which should be relevant. Nonetheless, you should also concede importance to the discussion opened by the other participants.
- It can also be suggested that you join one of the following groups where you can meet tennis experts and find innovative resources for your professional growth.

LinkedIn: (Each group goes with hyperlink):

- Professional tennis coaches

<https://www.linkedin.com/grp/home?gid=8132140&sort=POPULAR&trkInfo=click%20edVertical%3Agroup%2CclickedEntityId%3A8132140%2Cidx%3A3-3-8%2CtarId%3A1443012474920%2Ctas%3Acoaches+tenn&trk=tyah>

- ITF Coaching

https://www.linkedin.com/groups?gid=8112630&trk=vsrp_groups_res_name&trkInfo=VSRPsearchId%3A530503931443012607106%2CVSRPtargetId%3A8112630%2CVSRPcmpt%3Aprimary

- Tennis industry Network

https://www.linkedin.com/groups?gid=2350552&trk=vsrp_groups_res_name&trkInfo=VSRPsearchId%3A530503931443012819908%2CVSRPtargetId%3A2350552%2CVSRPcmpt%3Aprimary

- Jobs and Careers in tennis

https://www.linkedin.com/groups?gid=2692589&trk=vsrp_groups_res_name&trkInfo=VSRPsearchId%3A530503931443012819908%2CVSRPtargetId%3A2692589%2CVSRPcmpt%3Aprimary

- Strength and conditioning for tennis

<https://www.linkedin.com/grp/home?gid=4440467>

- The business of tennis

https://www.linkedin.com/groups?gid=3672620&trk=vsrp_groups_res_name&trkInfo=VSRPsearchId%3A530503931443012819908%2CVSRPtargetId%3A3672620%2CVSRPcmpt%3Aprimary

Facebook: (Each group goes with hyperlink)

- Real Tennis Coaches

<https://www.facebook.com/groups/643197515728943/?ref=ts&fref=ts>

- British Tennis Coaches Forum

<https://www.facebook.com/groups/BritishTennisCoachesForum/?ref=ts&fref=ts>

- Tennis Coaches Worldwide

<https://www.facebook.com/groups/29343537440/?ref=ts&fref=ts>

- Competitive Tennis Coaching

https://www.facebook.com/groups/justtennisplayers/?ref=br_rs

REFERENCES

- Ayres, S. (2013). Social Media facts, Retrieved September 8, 2015 from <http://www.postplanner.com/crazy-social-media-facts-that-are-actually-true/>
- Bullas, J. (2015). 33 Social Media Facts and Statistics You Should Know in 2015, Retrieved September 8, 2015 from <https://www.linkedin.com/pulse/33-social-media-facts-statistics-you-should-know-2015-jeff-bullas/>
- Cooper, B. (2013). Social Media statistics, Retrieved September 8, 2015 from <https://blog.bufferapp.com/10surprising-social-media-statistics-that-will-make-you-rethink-your-strategy>
- CMO COUNCIL. (2013). Internet Marketing, Retrieved September 11, 2015 from <http://www.cmocouncil.org/facts-stats-categories.php?category=internet-marketing>
- Kemp, S. (2015). Digital, Social & Mobile Worldwide in 2015, Retrieved September 13, 2015 from <http://wearesocial.net/blog/2015/01/digital-social-mobile-worldwide-2015/>
- Lunden, I. (2014). Instagram The fastest growing social site, Retrieved September 18, 2015 from <http://techcrunch.com/2014/01/21/instagram-is-the-fastest-growing-social-site-globally-mobile-devices-rule-over-pcs-for-social-access/>
- Reed, R. (2014). The WhatsApp Architecture Facebook , Retrieved September 11, 2015 from <http://highscalability.com/blog/2014/2/26/the-whatsapp-architecture-facebook-bought-for-19-billion.html>
- Stets, J.E., & Burke, P.J. (2000). Identity theory and social identity theory. *Social Psychology Quarterly*, 63(3), 224-237.

RECOMMENDED ITF TENNIS I COACH CONTENT (CLICK BELOW)

Tennis iCoach

CONCLUSION

Social networking sites have become essential resources in the changing, Globalized and competitive environment we currently live in, including the tennis industry. This article has presented current trends in the use of new technologies and from this momentum, five practical, manageable and free of cost tools were recommended for coaches and directors of clubs that seek to start exploring its immense potential.

The specific nature of endurance training in tennis

David Suárez y Josep Campos Rius (ESP)

ITF Coaching and Sport Science Review 2016; 68 (24): 8 - 10

ABSTRACT

The type of endurance training in tennis will be more or less specific depending on the different biomechanical and motor actions and tactical situations, both, at the time of execution of the stroke and during the different on-court movements. However, the dynamics of the change of direction and rhythm are also fundamental. More often than not, the presence of accelerations and decelerations in sprints and stops will be a differential factor for speed and endurance in tennis. We can, thus, easily infer that a load could be very specific in a certain context and not in another one.

Key words: endurance, specificity, tennis, integrated training.

Corresponding author: davidefd@outlook.com

Article received: 05 October 2015

Article accepted: 15 January 2016

INTRODUCTION

Depending on the internal and external relationship with the real game of tennis, the load will be more or less specific. This relationship will occur in some cases more than in others. Nonetheless, the globality and interrelation of the different factors are also elements of the specificity, particularly in complex sports such as tennis (Balagué, Torrents, Pol & Seirul-lo, 2014; Martínez-Gómez, 2015; Palut & Zanone, 2005; Verdugo, 2007). We can divide the loads into four types: general, targeted, specific and competitive (García-Manso et al., 2006).



SPECIFIC ENDURANCE

When the objective is to improve endurance in tennis, it is necessary to reach its most appropriate level in the game, in relation to the rest of the qualities and elements that determine performance. So, for working and recovery times, as well as for all motor manifestations, tennis must be taken as an exclusive reference (Baiget, Iglesias, Vallejo & Rodríguez, 2011; Kovacs, 2004; Nistch & Munzert, 2002).

It is also necessary to achieve a good interrelation and an optimal manifestation in the mental situations in competition. In practice, it is normal not to reach high aerobic and anaerobic indexes in top performance, due to incorrect technical, tactical and psychological preparation (Baiget et al., 2011; Balagué et al., 2014; Verjoshanski, 2002).

At the time of selecting the nature of the sessions and the training exercises in tennis, considering the conditional, coordination, and cognitive aspects, the following Navarro (2001) classification will be useful:

General:

Basic work to favour more specific and more efficient work. It must be tennis oriented and significant.

- Conditional: aerobic power, anaerobic threshold.
- Coordination: basic situations of the game.
- Cognitive-tactical: mechanical or very simple actions.
- Psychological: it impacts, depending on the subject, on suffering endurance, keeping intensity, attention and confidence. Repeated execution of simple, coordinated actions and decision making will enable positive situations and focused attention.



Targeted nature:

Endurance interrelates with the other performance factors.

- Conditional: different types of endurance in tennis. Intermittent, myoglobin, lactic and moderate lactic work.
- Coordination: specific and not very complex.
- Cognitive-tactical: simple decision making can be used during the game, or even in recovery, it can be more complex during active rest periods.
- Psychological: it impacts on attention and confidence. There are even simple situations but there is a greater coordination and a decision component that cause more psychological demands. There is a close relationship with decision making in situations of physical and mental fatigue and the capability of dealing with that mental fatigue while keeping intensity (De la Vega, Almeida, Ruiz, Miranda & del Valle (2011).

Specific nature:

The type of work which looks for the maximum game manifestation, sometimes going beyond the real demands of the game. Very often there is competition work (Fernández-Fernández, Méndez-Villanueva & Terrados, 2005):

- Conditional: manifestation in all the situations that arise during the tennis match. Action on the endurance of explosive action, increase of myoglobin, and better recovery (Kovacs, 2004a).
- Coordination: complex as in competition.
- Cognitive- tactical: complex as in competition.
- Psychological: complex, in competition situation.

A fourth type could be added, the Competitive nature, with a competitive situation close to the reality of the game (Fernández-Fernández, Sanz-Rivas & Méndez-Villanueva, 2009; Fernández-Fernández, Méndez-Villanueva & Plum, 2006; Kovacs, 2004b, 2007).



We could focus our attention on different factors within the specific nature of training as a global strategy attracting attention from a teaching methodology perspective (Delgado-Noguera, 2015; Sáenz, 1994):

- Specific endurance with conditional focus: technical and tactical elements are not considered the main objective, but are manifested in very simple situations. High intensity work with changes of direction will be given special attention (Baiget, Fernández-Fernández, Iglesias, & Rodríguez, 2015; Kovacs, 2014; Kovacs, Roetert & Ellenbecker, 2008). The importance of acceleration and deceleration is well known, as well as the limited relationship between lineal speed and changes of direction (Young y cols., 2002).
- Specific endurance with technical focus: attention is mainly centred on the technical factor or the execution. Emphasis is laid on mechanization or fixing a technical action or looking at the technical action under fatigue. Normally, in the case of endurance work with technical action, the focus will be mixed conditional-technical. (Baiget, 2011; Holmberg, 2014; Schönborn, 1999).
- Specific endurance with tactic-decision making focus: mainly centred on the tactical action or actions, on more or less complex decision making situations. It will normally be presented as a conditional-technical-focus. (Carvalho, Iglesias, Araújo, & García-González, 2011; McPherson, 1999; Ruíz-Pérez & Arruza, 2005).
- Specific endurance with psychological focus: centred on actions to keep intensity, manage fatigue, attention, etc. It will normally be mixed with a conditional-technical-tactical-mental focus (Lameiras, de Almeida & Mas, 2015; Lara, 2014; Young, 2015).

The normal progression for cycle or even session planning, consists of laying emphasis on the conditional (1), then the more and more complex technical situations (2), followed by introducing the very simple tactical and mental elements (3) and finally, finishing with some kind of global endurance (4). This dynamic structure can be transferred to long term development, where the trend will be to work focusing on endurance while understanding the complexity of



these elements (Balagué & et al., 2014; Fuentes, Del Villar, Ramos & Moreno, 2001; Torres, 2003). Still, we must never forget that there will always be components of all factors, and that it is key to know them and use the opportunity to work globally even at the beginning of the specific work. In top performance phases, predominant work is as follows:

- Specific endurance with global-competitive mixed focus: with manifestation of the different factors in a global and interconnected way, normally in real situations modifying factors like:
 - Reducing the court or a certain area
 - Enlarging the court or a certain area
 - Setting directions or during periods: four cross-court strokes, or two cross courts and one down-the-line, one cross-court and the other player down-the-line, a point after a certain number of times, etc.
 - With softer, hard, big or small balls.
 - With modified scores.

CONCLUSIONS

Specific work is key for training and producing significant results for tennis, and for endurance to make a clear impact on global performance. This optimal manifestation of endurance will be revealed by strengthening the rest of the qualities, such as speed, and mental or technical factors. Finally, everything is interrelated and it is right to think that we have to target training along these lines. Thus, it is very interesting to approach different ways of training with a specific and complex orientation.



REFERENCES

- Baiget, E. (2011). Entrenamiento de la fuerza orientado a la mejora de la velocidad de golpeo en tenis. *Journal of Sport and Health Research*, 3(3), 229-244.
- Baiget, E., Fernández-Fernández, J., Iglesias, X. & Rodríguez, F. A. (2015). Tennis Play Intensity Distribution and Relation with Aerobic Fitness in Competitive Players. *PloS One*, 10(6), DOI: 10.1371/journal.pone.0131304.
- Baiget, E., Iglesias, X., Vallejo, L. & Rodríguez, F. A. (2011). Efectividad técnica y frecuencia de golpeo en el tenis femenino de élite. *Case Study Motricidad: Revista de Ciencias de la Actividad Física y del Deporte*, 27, 101-116.
- Balagué, N., Torrens, C., Pol, R. & Seirul-lo, F. (2014). Integrated Coaching Dynamic principles and apps. *Notes Educación Física y Deportes*, 2(116), 60-68.
- Carvalho, J., Iglesias, D., Araújo, D. & García-González, L. (2011). El entrenamiento de la toma de decisiones en el tenis: ¿qué fundamentos científicos se pueden aplicar en los programas de entrenamiento?. *Revista de Psicología del Deporte*, 20, 767-783.
- De la Vega, R., Almeida, M., Ruiz, R., Miranda, M. & del Valle, S. (2011). Entrenamiento atencional aplicado en condiciones de fatiga en fútbol. *Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte*, 11(42), 384-406.
- Delgado-Noguera, M. A. (2015). Los estilos de enseñanza de la Educación Física y el Deporte a través de 40 años de vida profesional. *Retos*, 28, 240-247.
- Fernández-Fernández, J., Méndez-Villanueva, J. & Pluim, B. (2006). Intensity of tennis match play. *British Journal of Sports Medicine*, 40, 387-391.
- Fernández-Fernández, J., Méndez-Villanueva, A. & Sanz, D. (2012). Fundamentos del entrenamiento de la condición física para jugadores de tenis en formación. Madrid: Real Federación Española de Tenis.
- Fernández-Fernández, J., Méndez-Villanueva, A. & Terrados, N. (2005). Exercise intensity in tennis: simulated match play versus training drills. *Medicine Science in Tennis*, 10, 6-7.
- Fernández-Fernández, J., Sanz, D. & Méndez-Villanueva, A. (2009). A review of the activity profile and physiological demands of tennis match play. *Strength Conditioning Journal*, 31, 15-26.
- Fuentes, J. P., Del Villar, F., Ramos, L. A. & Moreno, P. (2001). Metodología para la planificación del entrenamiento en el tenis de alta competición. *Movimiento (ESEF/UFRGS)*, 7(14), 100-108.
- García-Manso, J. M., Navarro-Valdivielso, F., Legido-Arce, J. C. & Vitoria-Ortiz, M. (2006). La resistencia. Desde la óptica de las ciencias aplicadas al entrenamiento deportivo. Madrid: Grada Sport Books.
- Holmberg, P. M. (2014). Entrenamiento de la Agilidad para Atletas Experimentados: Un Enfoque de los Sistemas Dinámicos. Red: *Revista de Entrenamiento Deportivo*, 28(2), 35-42.
- Kovacs, M. (2004a). Energy System-Specific Training for Tennis. *Strength & Conditioning Journal*, 26(5), 10-13.
- Kovacs, M. (2004b). Applied physiology of tennis performance. *British Journal of Sports Medicine*, 40(5), 381-386.
- Kovacs, M. (2007). Tennis pysicsiology. *Sports Medicine*, 37, 189-198.
- Kovacs, M. (2014). Movimientos del tenis: La importancia del entrenamiento lateral. Red: *Revista de Entrenamiento Deportivo*, 28(1), 25-37.
- Kovacs, M., Roetert, P. & Ellenbecker, T. (2008). Efficient deceleration: The forgotten factor in tennis-specific training. *Strength & Conditioning Journal*, 30(6), 58-69.
- Lameiras, J., de Almeida, P. L. & Mas, A. G. (2015). The efficacy of the old way/new way methodology on the correction of an automated technical error and its impact on the athlete's psychological skills: case study in tennis. *Cuadernos de Psicología del Deporte*, 15(2), 79-86.
- Lara, A. (2014). Tenis: ejercicios progresivos para desarrollar tu juego. *Cuadernos de Psicología del Deporte*, 14(2), 155-156.
- Martínez-Gómez, M. (2015) Entrenamiento con jugadores en formación: "una aproximación desde el enfoque ecológico". *ITF Coaching and Sport Science Review*, 65(23), 17-19.
- McPherson, S. (1999). Expert-novices differences in performance skills and problema representations of youth and adults during tennis competition. *Research Quarterly for Exercise and Sport*, 70,3, 233-251.)
- Navarro-Valdivielso, F. (2001). Metodología del entrenamiento para el desarrollo de la resistencia (Módulo 2.2.1). Master Alto Rendimiento Deportivo. Madrid.
- Nistch, J. R. & Munzert, J. (2002). Aspectos del entrenamiento de la técnica desde la perspectiva de la teoría de la acción: Aproximaciones a un modelo integrador. En J. R. Nitsch, A. Neumaier, H. Mareales & J. Mester (Eds.). *Entrenamiento de la técnica* (pp. 129-191). Barcelona: Paidotribo.
- Palut, Y. & Zanone, P. G. (2005). A dynamical analysis of tennis: concepts and data. *Journal of Sports Sciences*, 23(10), 1021-1032.
- Ruiz-Pérez, L. M. & Arruza, J. (2005). El proceso de toma de decisiones en el deporte. Barcelona: Paidós.
- Sáenz, P. (1994). Metodología en educación física: ¿Enseñanza global o analítica? *Habilidad Motriz: Revista de Ciencias de la Actividad Física y del Deporte*, (4), 33-38.
- Schönborn, R. (1999). Tenis: entrenamiento técnico. Madrid: Tutor.
- Torres, J. (2003). Consideraciones científico-didácticas acerca del modelo integrado de enseñanza aprendizaje de los deportes colectivos. *Publicaciones*, 33, 101-140.
- Verkhoshansky, Y. (2002). Teoría y metodología del entrenamiento deportivo. Barcelona: Paidotribo.
- Verdugo, M G. (2007). Resistencia y entrenamiento. Una metodología práctica. Barcelona: Paidotribo.
- Young, J. (2015). El tenis es un juego que requiere una confianza fuerte y resiliente. *ITF Coaching and Sport Science Review*, 65 (25), 3-5.
- Young, W. B., James, R. & Montgomery, I. (2002). Is muscle power related to running speed with changes of direction?. *Journal of Sport Medicine and Physical Fitness*, 42(3), 282-290.

RECOMMENDED ITF TENNIS ICOACH CONTENT (CLICK BELOW)

Tennis  iCoach

Psychological factors related to choking under pressure

Takehiro Iwatsuki (JAP), Judy Van Raalte (USA), Britton Brewer (USA),
Albert Petitpas(USA) and Masanori Takahashi (JAP)

ITF Coaching and Sport Science Review 2015; 68 (24): 11 - 12

ABSTRACT

Tennis players who focus on their skill execution and self-regulation are likely to improve in training. On the other hand, focusing on performance too much (reinvestment) can result in “paralysis by analysis” and performance decrements. The purpose of this study was to examine the relationships between reinvestment, self-regulation, and perceived choking under pressure among 180 collegiate male and female tennis players from NCAA Division I in the United States (78 players), and from League I in Japan (102 players). Results indicated that a focus on skill execution via self-regulation was positively associated with conscious motor processing and negatively associated with perceived choking. This means that tennis players who consciously control their movement are less likely to perceive themselves as choking under pressure.

Key words: psychology, reinvestment, self-focus, cross-cultural comparison

Article received: 27 August 2015

Corresponding author: takehiro.iwatsuki@unlv.edu

Article accepted: 21 January 2016

INTRODUCTION

Competitive tennis requires excellent fitness and mental focus for optimal performance. Research has shown, however, that even skilled performers sometimes choke under pressure (Beilock, 2010). Reinvestment Theory (Masters & Maxwell, 2008) suggests that athletes who focus on the mechanical aspects of motor performance are more likely to experience “paralysis by analysis,” or choking under pressure, than are other athletes. Although reinvestment is associated with choking in competition, Self-Regulation Theory (Zimmerman, 2008) suggests that focusing on technical aspects of motor performance is related to skill improvement in training. Thus, there is an apparent paradox. Tennis players who reinvest and focus on their movement during competition are prone to choke, but tennis players who self-regulate and focus on mechanical details during training modify and improve their strokes. Understanding the relationships among reinvestment, self-regulation, and choking of high-level tennis players can help coaches balance the demands of skill development and performance in pressure situations. Therefore, the purpose of this research was to examine the relationships among reinvestment, self-regulation, and perceived choking behavior of competitive tennis players from different countries.

METHOD

Participants

Participants were 180 intercollegiate tennis players (98 men and 82 women) from NCAA Division I in the United States (78 players) and from League I in Japan (102 players).

Procedure

All tennis players gave informed consent and completed paper versions of validated psychological questionnaires regarding awareness of movement (reinvestment) and planning, monitoring, effort, self-efficacy, evaluation, and reflection self-regulation (Hong & O’Neil Jr., 2001; Howard et al., 2000; Masters, Eves, & Maxwell, 2005; Peltier et al., 2006). Participants also answered the question, “What is your tendency to choke under pressure in tennis?”

RESULTS

The purpose of the present study was to examine relations among reinvestment, self-regulation, and perceived choking under pressure. Cross-cultural comparisons between tennis players from the United States and Japan were also made. Results indicated that for tennis players, paying attention to movements and consciously controlling them (conscious motor processing) was positively correlated with key self-regulation skills and outcomes such as



planning, monitoring, effort, self-efficacy, evaluation, and reflection, and was unrelated to choking under pressure. It should be noted, however, that conscious motor processing was not correlated with choking under pressure. Thus, reinvesting by consciously controlling movement may be valuable for competitive tennis players.

With regard to monitoring style of movement (for example, thinking about how you are going to hit a forehand or thinking about what other people think about you while hitting a shot or moving toward a ball on the court), focusing on style of movement was associated with an increase in the perceived likelihood of choking under pressure. Tennis players who focus on how others evaluate their play are more likely to perceive themselves as choking under pressure.

Four self-regulation skills (planning, monitoring, effort, and self-efficacy) were negatively related to perceived choking. This means that athletes who perceived themselves as better at planning, monitoring, effort, and self-efficacy were less likely to perceive themselves as choking under pressure. For tennis coaches, focusing on these particular skills may be useful, particularly when working with players attempting to address choking-related issues.

Comparisons were made between college players from the United States and from Japan in terms of reinvestment, self-regulation, and perceived choking. Predictions about differences between groups on these variables were not made because it was unclear how the various factors (self, national culture, tennis culture), reinvestment, self-regulation, and perceived choking would be related to each other. Results indicated that there was a significant difference between American and Japanese players. Relative to Japanese tennis players, American players tended to report consciously controlling their movements and engaging in self-regulation, and

less likely to choke under pressure. Consequently, tennis coaches should consider national origin and/or cultural background when working with their players.

Limitations of this study should be noted. The correlational design of the research precluded determination of cause and effect. Further experimental research is needed to find out if self-regulation skills cause changes in perceived and actual choking. The study included a cultural comparison from two countries. Additional research can help determine if the current findings apply to tennis players from other countries.

CONCLUSION

In conclusion, this research explored the relationships among reinvestment, self-regulation, and perceived choking. The research findings indicate a tendency to consciously control movements might be beneficial to tennis players, as such conscious control can lead to improved tennis strokes and is not related to perceived choking under pressure. A tendency to consciously monitor style of movement and consider how others perceive movements, however, was associated with perception of choking under pressure. Helping tennis players to focus on factors other than the opinions of their opponents and spectators may be a valuable approach. In addition, self-regulation skills (e.g., greater self-efficacy) were associated with less perceived choking under pressure. Finally, cultural differences between American and Japanese players were revealed in this study.

What Coaches or Athletes Should Know/Do

- Improving self-regulation skills, especially self-efficacy, may reduce choking in tennis players
- Consciously working to control movements can be useful in developing stroke mechanics
- Focusing on how others perceive one's mechanics and form (for example how others perceive one's serve) may increase perceived choking in tennis players
- Using an external focus (for example, Where you are going to hit a ball) is a valuable skill (for a review, see Wulf, 2013)



ACKNOWLEDGEMENTS

This research was supported by a grant from the International Tennis Federation Coaching. The authors thank all players, coaches, and universities/colleges in the U.S. and Japan for their enthusiastic participation. We express our sincere appreciation to the Athletic Counseling Research Team at Springfield College for help with conceptualizing the ideas of this study.

REFERENCES

Beilock, S. (2010). *Choke: What the secrets of the brain reveal about getting it right when you have to*. New York: Free Press.

- Hong, E., & O'Neil Jr, H. (2001). Construct validation of a trait self-regulation model. *International Journal of Psychology*, 36, 186-194.
- Howard, B., McGee, S., Shia, R., & Hong, N. (2000). Metacognitive self-regulation and problem-solving expanding the theory base through factor analysis. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.
- Masters, R., Eves, F., & Maxwell, J. (2005). Development of a movement specific reinvestment scale. In T. Morris, P. Terry, S. Gordon, S. Hanrahan, L. Ievleva, G. Kolt, & P. Tremayne (Eds.), *Proceedings of the ISSP 11th World Congress of Sport Psychology*. Sydney, Australia: International Society of Sport Psychology.
- Masters, R., & Maxwell, J. (2008). The theory of reinvestment. *International Review of Sport and Exercise Psychology*, 1, 160-183.
- Peltier, J., Hay, A., & Drago, W. (2006). Reflecting on self-regulation: Scale extension and a comparison of undergraduate business students in the United Kingdom. *Journal of Marketing Education*, 28, 5-16.
- Zimmerman, B. (2008). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Education Research Journal*, 45, 166-183.
- Wulf, G. (2013). Attentional focus and motor learning: A review of 15 years. *International Review of Sport and Exercise Psychology*, 6, 77-104.

RECOMMENDED ITF TENNIS ICOACH CONTENT (CLICK BELOW)

Tennis iCoach

Muscular imbalances and their impact on the health of the tennis player: Assessments of explosive strength in the lower limbs by means of jumps

Javier Villaplana Velasco and Cristina Blasco Lafarga (ESP)

ITF Coaching and Sport Science Review 2015; 68 (24): 13 - 14

ABSTRACT

This paper discusses the existence of asymmetry in tennis players lower limbs, if these asymmetries impact on determining capabilities as Explosive Strength and Elastic Explosive Strength, and if so, how they are affected by fatigue. This paper holds the hypothesis that there exist differences in the capabilities of useful strength in the lower limb muscles, and that these muscular differences or asymmetries are the source of injury for developing tennis players.

Key words: tennis, asymmetry, jumps, injury prevention, health

Corresponding author: javilla@gmail.com

Article received: 08 January 2016

Article accepted: 23 January 2016

INTRODUCTION

In order to continue being successful in competition, players must accelerate, decelerate, change direction, move quickly, and keep balance while repeatedly producing optimal strokes until the end (Girard, Millet, 2008). As a consequence of these characteristics, literature shows the presence of injuries. Even asymmetry, another essential characteristic of tennis, is admitted to be a source of injury. Pluim, Staal, Windler, Jayanthi (2006) express in their revision that tennis is characterized by varied injuries, most of them in the lower limbs. Confirming this, Hjelm, Werner, Renstrom (2012) literature states that lower limb injuries are the most frequent, reaching 51% of the total. As to asymmetry, we have found papers dealing with torso and upper limb asymmetry, but not lower limb related. Even so, we can infer the existence of lower limb asymmetry, Carpes, Mota, Faria (2010) explain the bilateral asymmetry even in cyclic activities such as continuous sprinting and pedalling, and its risk of injuries in healthy athletes. This makes us think that if in cyclic sports there is asymmetry in lower limbs, in acyclic and asymmetric sports such as tennis, this situation has to be valid too.

Within this context, the objective of the following research is a) to prove the existence of lower limb imbalance in developing tennis players, and, b) if so, to reflect on the consequences of muscular imbalance of the lower limbs and their possible impact on the health of the tennis player.

METHODOLOGY

Sample

There were 5 participants in the study, all of them were males, with media values in age between 14,2 (0,84), height 170,2 (6,06) and weight 59 (8,89). Their weekly training volume was 26 hours, from Monday to Friday, divided into three sessions, two in the morning and one in the afternoon. The morning sessions included 2h30' of on-court training, and 1h30' of physical training. The afternoon session included on-court training for 1h30'. There was no afternoon session on Wednesday.

Procedure

The subjects were analyzed in December 2012. All of them warmed-up for 10 minutes, 5 minutes of continuous running and dynamic movement exercises (Meylan, Nosaka, Green, Cronin, 2010). No static stretching due to the negative impact demonstrated in previous studies in the different variables of the jumps (Meylan et al., 2010).

The exercises were SJ (squat jump) to evaluate explosive strength and CMJ (counter-movement jump) to evaluate the elastic explosive strength.

Each exercise consisted of 9 attempts (18 jumps total), which were distributed as follows: 3 attempts with the non-dominant leg (ND), 3 attempts with the dominant leg (D) and 3 with both legs

simultaneously (2PR). The recovery time between each jump of the same type was 30s. The recovery time between 3 jump blocks was 120s. (Meylan et al., 2010).

The test was made just before beginning the morning tennis training and was repeated after finishing it. This second time there was no warming-up.

Each participant received a questionnaire so as to know age, sex, type and degree of the injury they could have suffered during the previous year.

Data treatment and analysis

The tests were evaluated by means of photoelectric cells (Optojump next, Micrograte Srl, Bolzano, Italy) and the data gathered were entered into SPSS.20 for statistics, setting (pre test and post test) fatigue, kinetic chain (non-dominant leg jump, dominant leg jump and both leg jumps), and the type of jump (SJ and CMJ) as independent intra subject variables. On the other hand, the athlete's health was taken as an independent inter subject variable. Height (cm) was taken as a dependant variable.

The statistic treatment that was used was an analysis of the variance (anova) for inter group comparisons. The greatest jumps per exercise, and per athlete were analysed. The significance level was set at $p < 0.05$.

RESULTS

Figure 1 shows the differences of the effect on fatigue, considering explosive strength and elastic explosive strength.

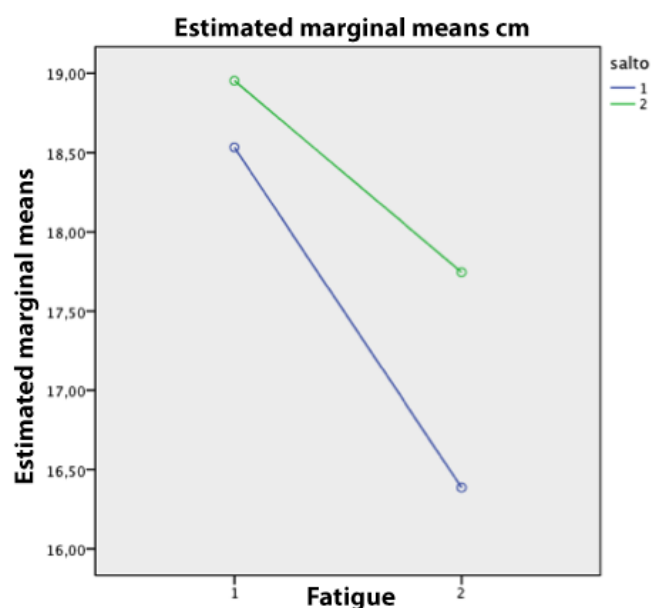


Figure 1. Graphic representation of the impact of fatigue on the type of jump. 1= SJ; 2= CMJ

After making the normality test (Kolgomorov-Smirnov) and sphericity test (Mauchly) the results of the anova intrasubject contrast test with repeated measurements, show significance for all factors analysed and their interactions.

Table 1 demonstrates that this significance is in favour of the pre-test, by comparing the differences between the total jumps prior to training with the same number of jumps when at the end of training. It also compares the difference between both types of jumps. Finally, it permits the analysis of the difference depending on the muscles involved.

		Media differences (I-I)	Error t.	P	IC (95 %)	
					Lower lim.	Upper lim.
Jump						
Total pre SJ	Total Post CMJ	1.677 * -0.890*	0.175 0.3	0.001 0.041	1.192 -1.1724	2.161 -0.056
Chain						
ND	D	-1.495*	0.174	0.003	-2.185	-0.805
	2PR	-12.200*	1.044	0.001	-16.335	-8.065
D	2PR	-10.705*	1.094	0.002	-15.036	-6.374

Table 1. Results of the comparison per pairs (Bonferroni adjustment) for the fatigue factors, jump and chain, considered in isolation.

When analysing the effect of fatigue on jumps, we observe that both exercises show training very significantly. And when analysing the chain, we note that both, for the non-dominant leg and for the two feet exercise, there were significant differences, while in the case of the dominant leg, the loss, though important, is not significant (table 2).

	Pre	Post	Media Differences (I-I)	Error t.	P	IC (95 %)	
						Lower lim.	Upper lim.
SJ	1	2	2.147*	0.241	0.001	1.478	2.816
CMJ	1	2	1.207*	0.207	0.004	0.632	1.781
ND	1	2	1.040*	0.315	0.03	0.165	1.915
D	1	2	0.85	0.378	0.088	-0.199	1.899
2PR	1	2	3.140*	0.213	0.000	2.549	3.731

Table 2. Results of the comparison per pairs (Bonferroni adjustment) for the fatigue*jump; fatigue*chain interactions.

Table 3 relates the interactions between fatigue, chain and jump, observing that for the SJ there is significance depending on fatigue for all kinetic chains proposed, however, for CMJ fatigue is only significant when jumping on two feet.

	Chain	(0)fatigue	(1)fatigue	Media differences (I-I)	Error tip.	p	IC (95%)	
							Lower lim.	Upper lim.
SJ	ND	pre	post	1,380*	0,292	0,009	0,569	2,191
	D	pre	post	1,860*	0,445	0,014	0,626	3,094
	2PR	pre	post	3,200*	0,305	0,000	2,353	4,047
CMJ	ND	pre	post	0,7	0,454	0,198	-0,56	1,96
	D	pre	post	-0,16	0,518	0,773	-1,599	1,279
	2PR	pre	post	3,080*	0,146	0,000	2,674	3,486

Table 3. Results of the comparison per pairs (Bonferroni adjustment) for the fatigue*chain* jump interactions.

DISCUSSION

In spite of the limitations of the sample, this paper confirms the hypothesis of the existence of asymmetry in the tennis players lower limbs. From our bibliographic search, it seems that this pilot study is the first one to show that asymmetry, since previous studies

centred on tennis players have studied the assessment of the trunk (Ellenbecker, Roetert, 2004) (Sanchis-Moysi, Idoate, Dorado, Alayon, Calbet, 2010). Some of these papers, Sanchis-Moysi et al. (2010) already say that the asymmetry of the trunk may be due to differences in the kinetic chain of the lower limbs, but none has evaluated those muscles directly. Later Sanchis-Moysi, Idoate, Izquierdo, Calbet, Dorado (2011) verified the existence of asymmetry in lower limbs for the muscles of the gluteus and iliopsoas but using magnetic resonance.

This functional muscular asymmetry has been related to the health of the athletes and their future risk of injuries (Menzel et al., 2012); the level of fatigue has been confirmed to be directly related to this risk (Goodall, Pope, Coyle, Neumayer, 2012). The results of our study confirm the loss of the explosive strength (SJ) and the elastic explosive strength (CMJ), after finishing training, either considering the jumps in isolation or together. This confirms that fatigue reduces the response capability of young players, increasing the risk of injury in the final part of training, or greater duration and intensity efforts.

What interested us most was what happened when comparing the dominant with the non-dominant leg. In this sense, we have found that when considering the total number of jumps with each modality, the loss of height has been significant, both, for the jump with the non-dominant leg, as well as for the jump with both legs, while there have been no significant differences for the dominant leg, when measuring pre- and post training. This makes us think that the fatigue of the non-dominant leg may be determining and may affect directly the jump with two legs. This disturbance in the application of the strength could be related to the injuries that occur as a consequence of the explosive actions in tennis.

REFERENCES

- Carpes, F. P., Mota, C. B., Faria, I. E. (2010). On the bilateral asymmetry during running and cycling - a review considering leg preference. *Phys Ther Sport*, 11(4), 136-142. doi: 10.1016/j.ptsp.2010.06.005
- Ellenbecker, T. S., Roetert, E. P. (2004). An isokinetic profile of trunk rotation strength in elite tennis players. *Med Sci Sports Exerc*, 36(11), 1959-1963.
- Girard, O., Millet, G. P. (2008). Neuromuscular fatigue in racquet sports. *Neurol Clin*, 26(1), 181-194; x. doi: 10.1016/j.ncl.2007.11.011
- Goodall, R. L., Pope, R. P., Coyle, J. A., Neumayer, R. (2012). Balance and agility training does not always decrease lower limb injury risks: a cluster-randomised controlled trial. *Int J Inj Contr Saf Promot*. doi: 10.1080/17457300.2012.717085
- Hjelm, N., Werner, S., Renstrom, P. (2012). Injury risk factors in junior tennis players: a prospective 2-year study. *Scand J Med Sci Sports*, 22(1), 40-48. doi: 10.1111/j.1600-0838.2010.01129.x
- Menzel, H. J., Chagas, M. H., Szmuchrowski, L. A., Araujo, S. R., de Andrade, A. G., de Jesus, F. R. (2012). Analysis of Lower Limb Asymmetries by Isokinetic and Vertical Jump Tests in Soccer Players. *J Strength Cond Res*. doi: 10.1519/JSC.ob013e318265a3c8
- Meylan, C. M., Nosaka, K., Green, J., Cronin, J. B. (2010). Temporal and kinetic analysis of unilateral jumping in the vertical, horizontal, and lateral directions. *J Sports Sci*, 28(5), 545-554. doi: 10.1080/02640411003628048
- Pluim, B. M., Staal, J. B., Windler, G. E., Jayanthi, N. (2006). Tennis injuries: occurrence, aetiology, and prevention. *Br J Sports Med*, 40(5), 415-423. doi: 10.1136/bjism.2005.023184
- Sanchis-Moysi, J., Idoate, F., Dorado, C., Alayon, S., Calbet, J. A. (2010). Large asymmetric hypertrophy of rectus abdominis muscle in professional tennis players. *PLoS One*, 5(12), e15858. doi: 10.1371/journal.pone.0015858
- Sanchis-Moysi, J., Idoate, F., Izquierdo, M., Calbet, J. A., Dorado, C. (2011). Iliopsoas and gluteal muscles are asymmetric in tennis players but not in soccer players. *PLoS One*, 6(7), e22858. doi: 10.1371/journal.pone.0022858

RECOMMENDED ITF TENNIS COACH CONTENT (CLICK BELOW)

Tennis*i*Coach

Is there a relationship between junior and senior tennis success?

Michael Bane, Bruce Elliott & Machar Reid (AUS)

ITF Coaching and Sport Science Review 2016; 68 (24): 15 - 17

ABSTRACT

Imagine you've just won a Wimbledon Championship and reached the number one world ranking, all before the age of 18. It sounds pretty unlikely but it happens more often than you would think—in the international junior game, that is. But what does this type of success mean in relation to the professional game? Do elite juniors become elite pros? This article will provide some evidence on this issue by presenting the tennis specific research conducted during the last years.

Key words: players, development, rankings, career

Corresponding author: mreid@tennisaustralia.com.au

Article received: 18 December 2015

Article accepted: 24 January 2016

INTRODUCTION

Will a good junior become a world class pro?

Many studies have investigated the relationship between junior and professional success in tennis, yet no universally accepted criteria exist for forecasting junior talent. A recent study found that competitors (both male and female) in three tournaments that are regarded as being among the most important international under-14 events—les Petits As (Tarbes), the French Open, and the European Championship—subsequently achieved significantly better professional rankings if they progressed to a final in one of the three events (Brouwers, De Bosscher & Sotiriadou, 2012). Indeed, approximately 18% of the male winners and 22% of the female winners, reached the ATP and WTA Top 20, respectively.

Similar findings are reported for results in the ITF junior (18 and under) competition. Separate studies into the ITF boys' and girls' circuits (Reid, Crespo, Santilli, Miley & Dimmock, 2007; Reid, Crespo & Santilli, 2009) revealed significant associations between the junior and subsequent professional rankings of athletes who reached an ITF year-end junior Top 20 ranking. However, the vast majority of variance in professional rankings remained unexplained in these studies, and junior ranking should only be considered as an indicator of professional success, rather than a precursor. The raw numbers suggest that approximately 45% of boys and girls who reach the ITF junior Top 20 later achieve a ranking in the ATP/WTA Top 100, with 16% of boys and 11% of girls going on to make the ATP/WTA Top 20. (Bowers et al, 2012) This compares favourably to the US college tennis circuit (for male players), which has been reported to have an 18% conversion rate from Top 10 college ranking to Top 100 ATP ranking (Reid et al., 2007).

Junior success

Success at the junior Grand Slams can be an indicator of future ATP/WTA rankings. For example, every single winner of the boys' French Open title between 1980 and 2000 reached the ATP Top 100, and 81% reached the ATP Top 50. The US Open boys' champions (35%) were the most likely to later achieve an ATP Top 10 ranking. More generally, 82%, 62%, and 28% boys' Grand Slam winners (1980–2000) achieved a ranking in the ATP Top 100, 50, and 10, respectively. The girls' French Open title is an even better predictor of success as a professional, with 100%, 90%, and 62% of winners achieving a position in the WTA Top 100, 50, and 10, respectively. Of all the girls' Grand Slam winners (1980–2000), 91%, 80%, and 35% achieved a ranking within the WTA Top 100, 50, and 10 respectively, indicating that success at this level translates to success on the professional circuit more readily in women's tennis.

Year Won	Player-Female	Peak Senior Ranking
1980	Kathy Horvath	10
1981	Bonnie Gadusek	8
1982	Manuela Maleeva	3
1983	Pascale Paradis	20
1984	Gabriela Sabatini	3
1985	Laura Garrone	32
1986	Patricia Tarabini	12
1987	Natasha Zvereva	5
1988	Julie Halard	7
1989	Jennifer Capriati	1
1990	Magdalena Maleeva	4
1991	Anna Smashnova	15
1992	Rossana de los Ríos	51
1993	Martina Hingis	1
1994	Martina Hingis	1
1995	Amélie Cocheteux	55
1996	Amélie Mauresmo	1
1997	Justine Henin	1
1998	Nadia Petrova	3
1999	Lourdes Domínguez	40
2000	Virginie Razzano	16

Table 1: Girls junior French Open champions between 1980-2000 and their peak senior ranking.

Year Won	Player- Male	Peak Senior Ranking
1980	Henri Leconte	5
1981	Mats Wilander	1
1982	Tarik Benhabiles	22
1983	Stefan Edberg	1
1984	Kent Carlsson	6
1985	Jaime Yzaga	18
1986	Guillermo Pérez Roldán	31
1987	Guillermo Pérez Roldán	31
1988	Nicholas Pereira	74
1989	Fabrice Santoro	17
1990	Andrea Gaudenzi	18
1991	Andriy Medvedev	4
1992	Andrei Pavel	13
1993	Roberto Carretero	58
1994	Jacobo Díaz	68

Year Won	Player- Male	Peak Senior Ranking
1995	Mariano Zabaleta	21
1996	Alberto Martín	34
1997	Daniel Elsner	92
1998	Fernando González	5
1999	Guillermo Coria	3
2000	Paul-Henri Mathieu	12

Table 2: Boys junior French Open champions between 1980-2000 and their peak senior ranking.

Home ground

Success on the professional circuit has been linked to more than just the rankings and results achieved in junior competition—it has also been associated with the court surface on which players predominantly develop their game. Researchers (Reid, Crespo, Santilli, Miley & Dimmock, 2007; Reid, Crespo & Santilli, 2009) have found that both male and female players who originate from countries in which the majority of junior competition is played on clay go on to achieve significantly higher professional tennis rankings.

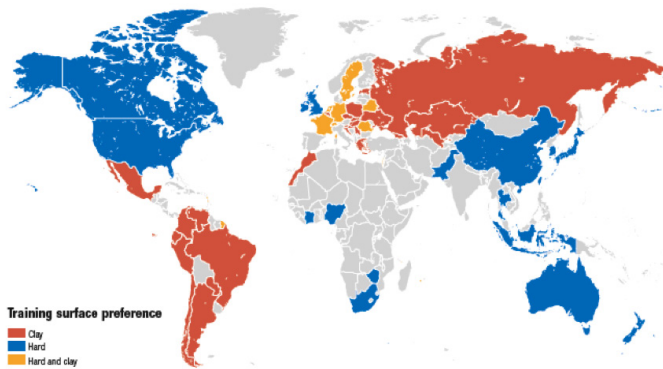


Figure 1. Training surface preferences around the world.

Surface success

These tables show the winners in the girls' and boys' Wimbledon and US Open junior championships from 1990 to 2000, their nationalities, and the surfaces on which they learned to play tennis. Clay surfaces clearly predominate.

Year	Girls Wimbledon Champion	Country	Predominant Training Surface
1990	Andrea Strnadova	Czechoslovakia	Clay
1991	Barbara Rittner	Germany	Clay/Hard
1992	Chanda Rubin	USA	Hard
1993	Nancy Feber	Belgium	Clay
1994	Martina Hingis	Switzerland	Clay/Hard
1995	Aleksandra Olsza	Poland	Clay
1996	Amelie Mauresmo	France	Clay/Hard
1997	Cara Black	Zimbabwe	Hard
1998	Katarina Srebotnik	Slovenia	Clay
1999	Iroda Tulyaganova	Uzbekistan	Clay
2000	María Emilia Salerni	Argentina	Clay

Table 3. Developmental surfaces of girls junior Wimbledon champions 1990-2000.

Year	Boys' Wimbledon Champion	Country	Predominant Training Surface
1990	Leander Paes	India	Hard
1991	Thomas Enqvist	Sweden	Clay/Hard
1992	David Škoch	Czechoslovakia	Clay
1993	Razvan Sabau	Romania	Clay/Hard
1994	Scott Humphries	USA	Hard
1995	Olivier Mutis	France	Clay/Hard
1996	Vladimir Voltchkov	Russia	Clay
1997	Wesley Whitehouse	South Africa	Hard
1998	Roger Federer	Switzerland	Clay/Hard
1999	Jürgen Melzer	Austria	Clay
2000	Nicolas Mahut	France	Clay/Hard

Table 4: Developmental surfaces of boys junior Wimbledon champions 1990-2000.

Year	Girls US Open Champion	Country	Predominant Training Surface
1990	Magdalena Maleeva	Bulgaria	Hard
1991	Karina Habšudová	Czechoslovakia	Clay
1992	Lindsay Davenport	USA	Hard
1993	Maria Bentivoglio	Italy	Clay
1994	Meilen Tu	USA	Hard
1995	Tara Snyder	USA	Hard
1996	Mirjana Lurić	Croatia	Clay
1997	Cara Black	Zimbabwe	Hard
1998	Jelena Dokić	Australia	Hard
1999	Lina Krasnoroutskaya	Russia	Clay
2000	Maria Emilia Salerni	Argentina	Clay

Table 5: Developmental surfaces of girls junior US Open champions 1990-2000.

Year	Boys US Open Champion	Country	Predominant Training Surface
1990	Andrea Gaudenzi	Italy	Clay
1991	Leander Paes	India	Hard
1992	Brian Dunn	USA	Hard
1993	Marcelo Ríos	Chile	Clay
1994	Sjeng Schalken	Netherlands	Clay/Hard
1995	Nicolas Kiefer	Germany	Clay/Hard
1996	Daniel Elsner	Germany	Clay/Hard
1997	Arnaud Di Pasquale	France	Clay/Hard
1998	David Nalbandian	Argentina	Clay
1999	Jarkko Nieminen	Finland	Hard
2000	Andy Roddick	USA	Hard

Table 6: Developmental surfaces of boys junior US Open champions 1990-2000.

CONCLUSION

For a game so rich in history, tennis is remarkably low in systematic and objective insight. It is a surprise to many industry outsiders that tennis trails other sports in understanding its own trends. It has been slow to embrace the virtues of performance analysis and this has hindered the extent to which the game's stakeholders (that is, players and coaches) can make informed decisions both on and off the court. The recent rule change by the ITF to allow technology to be used to collect data during play demonstrates that the game's governing body accepts that technology is part of tennis, and indeed the sport has now begun to benefit from the more strategic use of technology to grow its repository of game intelligence. The manner in which this information can then be leveraged to inform the coaching process represents an increasingly important competitive advantage in our sport.

REFERENCES

- Bane, M., Elliott, B, and Reid, M. (2015). "Performance analysis and game intelligence" In M. Reid, B. Elliott, & M. Crespo (Eds.). *Tennis Science: How racquet and player work together* (pp. 54-73). The Ivy Press, Lewes.
- Brouwers, J., De Bosscher, V., and Sotiriadou, P. (2012), "An examination of the importance of performances in youth and junior competition as an indicator of later success in tennis," *Sport Management Review*, 15, 461-475.
- Reid, M., Elliott, B., & Crespo, M. (2015). *Tennis Science: How racquet and player work together*. The Ivy Press, Lewes.
- Reid, M., M. Crespo, M., Santilli, L. Miley, D., and J. Dimmock, J. (2007), "The importance of the International Tennis Federation's junior boys' circuit in the development of professional tennis players," *Journal of Sports Sciences*, 25, 667-672.
- Reid, M., Crespo, M., and Santilli, L. (2009), "Importance of the ITF junior girls' circuit in the development of women professional tennis players," *Journal of Sports Sciences*, 27, 1443-1448.

RECOMMENDED ITF TENNIS ICoach CONTENT (CLICK BELOW)

Tennis  **iCoach**

Helping junior tennis players cope with their emotions

Camilla Knight, Francesca Lewis & Stephen Mellalieu (GBR)

ITF Coaching and Sport Science Review 2016; 68 (24): 18 - 20

ABSTRACT

Competition is an integral component of junior tennis. Through competition children can test their physical prowess, develop their psychological skills and, ultimately, progress through the rankings. While some enjoy tournaments and excel when competing, others find it more challenging and experience emotions such as anxiety and pressure when they perform. For children to succeed in matches and reach their potential as tennis players, they must be able to cope with the range of emotions that arise before, during, and after matches. It is therefore important to understand the emotions that children experience when they compete and help them develop appropriate coping strategies to manage these emotions. This article provides recommendations for coaches regarding how they can help children to cope with the emotions they experience when competing.

Key words: Emotions, coping, junior tennis, tournaments

Article received: 25 February 2015

Corresponding author: c.j.knight@swansea.ac.uk

Article accepted: 09 March 2016

INTRODUCTION

Participation in competition is an integral part of the youth sport experience. Through competition, children not only test and develop their physical skills and fitness but also have an opportunity to develop their psychological and social qualities (Cumming, Smoll, Smith, & Grossbard, 2007). Despite the benefits that can be gained through competition, concerns have been raised regarding potential negative consequences (cf. Sagar & Lavallee, 2010). Children can experience high levels of stress and pre-competitive anxiety when they compete and these feelings can negatively affect sport performance, participation, and health (Crocker, Hoar, McDonough, Kowalski, & Niefer, 2004). For example, high-levels of pre-competitive anxiety have been associated with avoidance of sport, reduced sport enjoyment, burnout, and sleep disruption (Gould, Udry, Tuffey & Loehr, 1996).

To minimize the negative psychological and social consequences of competition, it is important that children understand their emotions and develop strategies to control or cope with the emotions they experience (Crocker et al., 2004). If children are unable to cope with the emotions they experience, the chances of them reaching their potential are greatly reduced. Coaches can play a critical role in helping children to manage their emotions in a variety of ways, including (but not limited to): (1) Understanding the emotions children experience and normalizing such experiences; (2) Working with children to reappraise situations and emotions; and (3) Helping children to develop individual coping strategies.

UNDERSTANDING EMOTIONS AND NORMALISING EXPERIENCES

A recent study of elite junior tennis players identified that children experienced 25 different emotional experiences before, during, and following matches (Lewis, Knight, & Mellalieu, 2014). For example, players described feeling nervous, calm, and excited before matches, confident, bored, and happy during matches, and embarrassed, despondent, and relieved following matches. These findings replicate previous studies conducted in other sports, which have indicated that athletes experience emotions ranging from anger, guilt, and anxiety to happiness, pride, and relief when they are competing (Neil, Hanton, Mellalieu, & Fletcher, 2011; Uphill & Jones, 2007). Such findings provide a clear indication of the range and volume of emotions experienced by athletes and simply sharing such insights with players may help to reassure them that the emotions they experience when they are competing are normal (Lewis, 2014). An additional strategy is to provide players with opportunities to discuss and review the emotions they see professional players experience when competing. This can further help players to understand that emotions are a common part of sport, and the distinguishing factor between athletes is how well they cope with or manage their emotions.



A variety of theories have been developed to help explain how and why athletes experience and regulate emotions in sport (Crocker et al., 2004). One theory that has been widely used is Lazarus' (1991) cognitive-motivational-relational theory. This theory states that the emotions individuals experience are a by-product of their personality and the surrounding environment combined with cognitive, motivational, and relational features (Lazarus, 1991). Therefore, neither the individual nor environment is independently responsible for the emotions experienced; rather it is the ongoing transaction or relationship between the individual and the environment that produces an emotion. Thus, for players to understand the emotions they experience, and consequently develop strategies to manage these emotions, it is important to consider both the environmental and the individual personal factors that influence their experiences. Two factors are particularly important to consider: (1) Cognitive appraisal of the situation and one's emotions, and (2) The coping strategies employed to manage these appraisals and emotions. Attending to these factors are two key strategies coaches can employ to help children manage their overall emotional experiences in and around training and competition.

Working with children to reappraise situations and emotions

Cognitive appraisals comprise two processes. The first, termed primary appraisals, are motivationally orientated and involve the individual evaluating the importance of a situation to themselves (Lazarus, 1991). Primary appraisals consist of three components; goal relevance, goal congruence, and goal content (Uphill & Jones, 2007). Goal relevance refers to whether there is anything at stake for the individual. If there is something at stake then it will result in the experience of an emotion associated with the importance of the goal, such as anger or happiness (Lazarus, 1991).

Goal congruence refers to whether the encounter is viewed as harmful or beneficial, and will determine whether the emotion generated is positive (e.g., pride) or negative (e.g., anxiety; Lazarus, 1991). Finally, goal content describes what type of goal is at stake, for example the protection of one's perceived competence (Lazarus, 1991).

Given the importance of personal goals in relation to players' emotional experiences, it would appear pertinent to encourage players to adjust their goals to focus on performance rather than outcomes (as is recommended in achievement goal theory literature, see Harwood, Spray, & Keegan, 2008). If participants create goals that are under (or at least more under) their control (e.g., performance rather than outcome goals) participants will have more chance of protecting their goals. If participants cannot shift their personal goals from, for example winning, it might be beneficial if athletes could at least be encouraged to identify or acknowledge their personal goals prior to competition. This might allow participants to identify when they might experience different emotions and allow them to prepare strategies to cope with them if/ as they arise.

In addition to reappraising their goals, players should also be encouraged to reappraise the demands they are encountering, viewing them as challenging rather than threatening or harmful (Jones, Meijen, McCarthy, & Sheffield, 2009). If players are in a 'challenge' state, emotions are perceived to be beneficial towards performance. However, in a 'threat' state emotions are perceived to be harmful towards performance (Jones et al., 2009). Therefore, by helping players to view different situations as challenges to be overcome, rather than threats to their goals, players will be able to better regulate their emotions and maintain or improve their performance. Recent research has demonstrated that facilitative interpretations of negative emotions can add positive value to performance, whereas debilitating interpretations of negative emotions can be detrimental to performance (e.g., Neil et al., 2011). That is, if players can be encouraged to positively interpret their negative emotions (e.g., anxiety) during matches this can result in either maintenance or an increase in performance levels. In comparison if players negatively interpret their emotions during matches it is likely to have a debilitating effect on performance. One simple strategy here is to help players see the potential benefits that arise from anxiety (e.g., better focus, more activated) rather than viewing anxiety as a bad thing.

Help children to develop individual coping strategies

In contrast to primary appraisals, secondary appraisal is concerned with an individual's assessment of what action can be taken in situations where there is the potential of harm or benefit to the individual (Lazarus, 2000). Thus, tied into secondary appraisals are an individual's coping options. Coping relates to the action (thoughts and behaviors) that is carried out to manage the demands an individual faces. How one copes is influenced by evaluating (appraising) what action is possible or necessary, what action is acceptable in the situation, and what action is likely to be most effective in dealing with the situation (Lazarus 2000). Coping can be broadly classified into three categories; problem-, emotion-, and avoidance-focused. Problem-focused coping seeks to reduce or eliminate threat or harm in the person-environment by obtaining practical information about how to tackle the situation (Lazarus & Folkman, 1984). For example, if a player is struggling with their serve and becoming frustrated, they might look to make a technical change to address the problem. In contrast, emotion-focused coping involves attempts to regulate emotional responses to given situations and is directed at changing one's emotions rather than attempting to change the situation or the demands directly (Lazarus & Folkman). For example, if a player is feeling very anxious at a change of ends they might use relaxation strategies to calm their nerves but not actually address the problem underpinning the anxiety.

Avoidance coping describes behavioral (removing self from situation) and psychological (cognitive distancing) efforts to disengage from a stressful situation (cf. Nicholls & Polman, 2007).



Effective coping strategies have the ability to inhibit, control, and even change one's emotions experienced, hence helping players to develop their coping strategies is critical in the management of emotions.

Players are likely to learn about coping through trial and error by trying different coping strategies during their sporting experiences, in addition to having opportunities to reflect on their strategies, being taught specific strategies, and being increasingly introduced to different situations in which they might have to employ different coping strategies (Tamminen & Holt, 2012). Therefore, as a coach, working with players to teach them different coping strategies and providing players with opportunities to test out different strategies to cope with their emotions is beneficial.

CONCLUSION

While all players will experience positive and negative emotions during their tennis careers, coaches can play a critical role in helping develop appropriate strategies to manage and maximize the positive consequences of these emotions. If coaches can commit time to understanding a players' emotions and work with them to develop, practice, and learn different approaches to regulating emotions, it can play a critical role in helping players achieve success.

REFERENCES

- Crocker, P. R. E., Kowalski, K. C., Hoar, S. D., & McDonough, M. H. (2004). Emotion in sport across adulthood. In M. Weiss (Ed.), *Developmental sport and exercise psychology: A lifespan perspective*. (pp. 333-355). Fitness Information Technology Inc.: Morgantown, WV.
- Cumming, S. P., Smoll, F. L., Smith, R. E., & Grossbard, J. R. (2007). Is winning everything? The relative contributions of motivational climate and won-lost percentage in youth sports. *Journal of Applied Sport Psychology*, 19, 322-336. doi: 10.1080/10413200701342640.
- Gould, D., Udry, E., Tuffey, S., & Loehr, J. (1996). Burnout in competitive junior tennis players: I. A quantitative psychological assessment. *The Sport Psychologist*, 10, 322-340.
- Harwood, C. G., Spray, C. M., & Keegan, R. J. (2008). Achievement goal theories in sport. In T. Horn (Eds.), *Advances in sport psychology* (3rd ed., pp. 157-185). Champaign, Illinois: Human Kinetics.
- Jones, M. V., Meijen, C., McCarthy, P. J., & Sheffield, D. (2009). A theory of challenge and threat states in athletes. *International Review of Sport and Exercise Psychology*, 2, 161-180. doi: 10.1080/17509840902829331.
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
- Lazarus, R. S. (2000). Cognitive-motivational-relational theory of emotion. In Y. Hanin (Eds.), *Emotion in sport* (pp. 40-63). Champaign, IL: Human Kinetics.

- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Lewis, F. L. (2014). *Emotional Experiences at Junior Tennis Tournaments*. Unpublished MSc by Research Thesis. Swansea University, UK.
- Lewis, F. R., Knight, C. J., & Mellalieu, S. D. (2014, April). Emotional reactions at junior tennis tournaments. Oral presentation at the British Association for Sport and Exercise Sciences student conference, Portsmouth, UK.
- Neil, R., Hanton, S., Mellalieu, S. D., & Fletcher, D. (2011). Competition stress and emotions in sport performers: The role of further appraisals. *Psychology of Sport & Exercise*, 12, 460-470. doi: 10.1016/j.psychsport.2011.02.001.
- Nicholls, A. R., & Polman, R. C. J. (2007). Coping in sport: A systematic review. *Journal of Sports Sciences*, 25:1, 11-31. doi: 10.2466/pms.100.1.192-194.
- Sagar, S. S., & Lavallee, D. (2010). The developmental origins of fear of failure in adolescent athletes: Examining parental practices. *Psychology of Sport & Exercise*, 11, 177-187. doi: 10.1016/j.psychsport.2010.01.004.
- Tamminen, K. A., & Holt, N. L. (2012). Adolescent athletes' learning about coping and the roles of parents and coaches. *Psychology of Sport & Exercise*, 13, 69-79. doi: 10.1016/j.psychsport.2011.07.006
- Uphill, M. A., & Jones, M. V. (2007). Antecedents of emotions in elite athletes: A cognitive motivational relational theory perspective. *Research Quarterly for Exercise and Sport*, 78, 79-89. doi: 10.5641/193250307X13082490460508.

[RECOMMENDED ITF TENNIS ICOACH CONTENT \(CLICK BELOW\)](#)

Tennis  **iCoach**

Enjoyment: Fresh clues for coaches

Janet Young (AUS)

ITF Coaching and Sport Science Review 2016; 68 (24): 21 - 23

ABSTRACT

"I was never pushed, mum didn't know anything about tennis so when I went off to a tournament she'd say 'Bye, have a lovely day', and when I came back she'd say 'Hi, did you have a lovely day?' Having fun was the one thing that helped me most (to be a champion)." (Evonne Goolagong Cawley). This paper reviews Csikszentmihalyi's conceptualisation of enjoyment as a process that occurs when high challenges and skills are matched. Implications for coaches are explored together with the benefits that can arise when tennis is fun.

Key words: enjoyment, fun, coach

Corresponding author: janet_young7@yahoo.com.au

Article received: 27 April 2015

Article accepted: 30 January 2016

INTRODUCTION

The above quote from the legend Evonne Goolagong Cawley was recently reported when Cawley conducted a training camp for indigenous Australian junior players and was asked what advice she had for aspiring players. Quite simply, her advice was 'have fun and enjoy your tennis'. Well, we all know what fun and enjoyment are, right? Interestingly, the answer is likely to vary quite considerably across players. Fun and enjoyment are likely to mean different things to different individuals. This is really no great surprise given the various definitions of 'fun' and 'enjoyment' to be found in the sport literature. What is however agreed is that the two words are generally considered to be synonymous and, as such, have been used interchangeably in the sport literature (Berger et al. 2006). Given the critical significance of fun and enjoyment for understanding why so many of us play tennis, this paper addresses these key concepts and presents a new perspective on viewing enjoyment. This should be of particular interest to coaches who are frequently searching for clues to make lessons enjoyable. Let's first look at defining fun and enjoyment.

Definitions

Typically, fun is defined as "what provides amusement and enjoyment" (Berger et al. 2006). With many definitions to be found in the sport literature, a popular definition of enjoyment is "a positive affective response to the sport experience that reflects feelings and/or perceptions such as pleasure, liking and experiencing fun" (Scanlan, 1989). From these definitions it is easy to see why fun and enjoyment tend to be used synonymously - the word enjoyment is used to define the word fun and vice versa! Accordingly, fun and enjoyment will be used interchangeably in this paper.

Sources of Enjoyment

Research has identified a range of sources of enjoyment for participants in sport, including juniors, adults and elite performers (Scanlan, Simons 1992; Scanlan et al. 1989). Notwithstanding individual differences, the main sources of enjoyment for participants include competitive achievement, developing good family/coach relationships, the excitement of the game, personal accomplishment, the kinaesthetic movement/feeling of playing, social recognition from significant others, forming friendships, having the opportunity to travel and gaining feelings of competency.

Benefits of Enjoyment in Sport

There is strong research support for the critical importance of enjoyment in sport (Scanlan, Simons 1992; Scanlan et al. 1989). Firstly, individuals are more likely to participate in sport if it is fun and enjoyable and will drop out of sport when it is no longer fun or enjoyable. Further, individuals who enjoy their sport are more likely to exert more effort, give greater commitment, participate longer and perform well. When sport is enjoyable, individuals are also



more likely to experience feelings of accomplishment, euphoria and happiness that, in turn, may add meaning and 'zip' to an individual's daily life (Berger, Weinberg, 2006). As such, there are many good reasons for us to enjoy our sport!

A couple of quotes from champion tennis players illustrate the importance of enjoyment in tennis. Prior to the French Open this year Serena Williams said "I am having so much fun (playing)". This sentiment has been previously echoed by a number of players including the former Spanish champion Arantxa Sanchez-Vicario, "I loved to play ... tennis was my passion and I enjoyed myself on the court". When former World Number 1 Jim Courier announced his retirement from the game he said, "It was a gradual feeling where my enthusiasm to train and prepare started to wane. I was not enjoying getting ready to play matches. I was at a point where I was almost going to go through the motions of playing". Similar sentiments were echoed by Steffi Graf when she retired from the game. "I no longer felt like playing ... For quite a while I had been asking myself if I was going out there for the right reasons, which were to give myself to the game completely and have fun".

A New Approach to Enjoyment

Traditionally enjoyment has been thought of as a positive affective state that reflects feelings of pleasure, liking and fun as described above. A different and thought-provoking approach to enjoyment has been recently proposed by (Csikszentmihalyi, 1990). This approach will now be described as it presents an alternative perspective on enjoyment that may be of value to coaches in developing lessons and training sessions.

According to (Csikszentmihalyi, 1990) enjoyment is an experience or process (versus a positive affective state) that occurs "when a person has not only met some prior expectation or satisfied a need or a desire but also gone beyond what he/she has been

programmed to do and achieved something unexpected, perhaps something even unimagined before” . As such, enjoyment is characterised by a sense of effort, novelty and accomplishment. An enjoyable activity becomes intrinsically rewarding and is done not with the expectation of some future benefit but simply because doing it is the reward. Enjoyable activities are pursued for their own sake. Individuals experience positive feelings after completing such activities and generally not during the activity.

The Elements of Enjoyment

As suggested by (Csikszentmihalyi, 1990) the core of conceptualisation is the notion that enjoyment is a balance between a high level of challenges and skills. This conceptualisation is depicted in the following diagram.

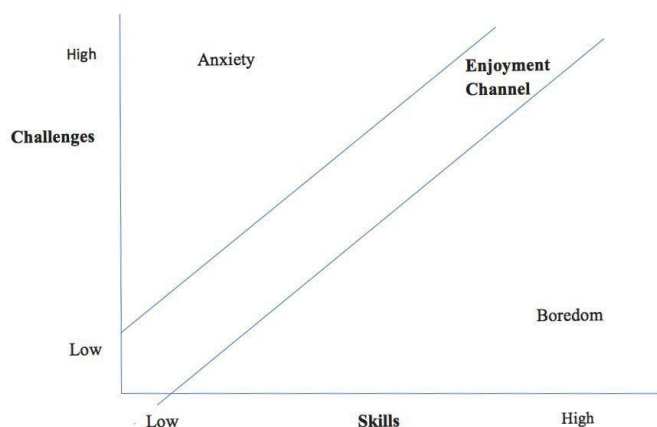


Figure 1. The balance between a high level of challenges and skills.

Figure 1 shows that anxiety will occur when an individual perceives the challenges faced outweigh his/her skills. Similarly, when an individual perceives his/her skills to be greater than the challenges presented the result is boredom. A ‘channel’ of enjoyment, as depicted in Figure 1, occurs when there is a balance between a high level of perceived challenges and skills. This is however not a static situation - individuals cannot enjoy doing the same thing at the same level because they grow either bored or frustrated. To continue to enjoy, individuals need to stretch their skills or discover new opportunities for using them.

Other elements of enjoyment include clear goals and unambiguous feedback, that is, individuals are clear about what they are to do and receive feedback about the success of their actions. The feedback in turn provides a clear idea of the next action and the cycle of specific goals and clear feedback continues. Further, there is complete and effortless concentration on the task at hand.

How to Find Enjoyment

(Csikszentmihalyi, 1990) proposes that enjoyment is achievable for all individuals. To this end he proposes individuals adopt the following steps:

- Set clear goals to strive for and develop appropriate skills
- Become immersed in the activity and keep concentrating on what they are doing
- Monitor progress in terms of the goals chosen
- Keep raising the stakes if the activity becomes boring

Readers who are interested in more detail and discussion on the steps to enjoyment may wish to refer to Csikszentmihalyi’s publication on Flow: The psychology of optimal experience (p. 208-213).

CSIKSZENTMIHALYI’S APPROACH TO ENJOYMENT: KEY CONSIDERATIONS FOR COACHES

If coaches adopt the approach to enjoyment by (Csikszentmihalyi, 1990), then they have a role to play to guide players to enjoy their lessons, training and competition. It is a role that is somewhat different to that implied under the traditional conceptualisation of enjoyment as simply a positive affect or feeling. When enjoyment is simply a positive effect coaches may not fully appreciate the critical element of uniquely tailoring high challenges in lessons, training and competition to a player’s perception of his/her abilities.

In brief, key considerations for coaches who adopt (Csikszentmihalyi, 1990) approach include:

- Enjoyment is attainable and dynamic (not static). It does not generally just happen by chance although it can.
- Main predictor of enjoyment is a player’s perception of a balance between a high level of challenges faced and his/her skills – unless challenges stretch a player then that player is likely to be bored or alternatively too demanding challenges can be confronting for a player and cause anxiety.



- An individual approach is required when working with players. Every player is different and it is important to understand how each player views the challenges faced and his/her abilities to respond.
- A player must invest effort and concentration in playing the game for it to be enjoyable.
- Goal setting with a player is an important activity as is monitoring a player’s progress towards achieving his/her goals in conjunction with giving regular and constructive feedback.
- Enjoyment is an on-going process. Players must continue to be challenged, and continue to develop their skills. Enjoyment is not a life- or career-long ‘given’.

CONCLUSIONS

Let’s return to Evonne Goolagong Cawley’s advice to players to ‘have fun and enjoy your tennis’ (cited in the Introduction). Such advice has the advantage of directing a player’s attention away from the often debilitating and burdensome concern with ‘winning’. Rather, a player who is having fun plays tends to play instinctively, freely, effortless and fearlessly. This was certainly how Cawley herself played! It is only when players are experiencing fulfilment and enjoyment in their play that they can achieve peak performances (Heathcote, 1996). Paradoxically, ‘winning’ is closer at hand when a player lets go of the notion of ‘winning’ and simply has fun on the court.

This paper provides some novel clues to coaches about enhancing a player’s enjoyment of the game. Based on a conceptually different view of enjoyment to the traditional notion of enjoyment as simply

a feeling or affect, (Csikszentmihalyi, 1990) directs a coach to a process-orientated approach. His framework of enjoyment is intuitively appealing and alerts coaches to the critical elements of challenges, skills, goals and concentration. Csikszentmihalyi never suggests that the pursuit of enjoyment is an easy one but he clearly advocates that it is a most worthwhile and achievable pursuit. All this makes sense when we remember that tennis is a game and games are fun and to be enjoyed (rather than endured and suffered). There is nothing better than to enjoy our tennis. It is such good fun! To this end, let's remember to follow Cawley's advice that was passed on to her by her wise mother.

REFERENCES

- Berger, B.G., Pargman, D, & Weinberg, R.S. (2006). Foundations of exercise psychology (2nd Ed.). Morgantown, WV: Fitness Information Technology Inc.
- Csikszentmihalyi, M. (1990). Flow: The psychology of optimal experience. New York: Harper & Rowe.
- Heathcote, F. (1996). Peak performance. Dublin: Wolfhound Press.
- Scanlan, T. K., & Simons, J. P. (1992). The construct of sport enjoyment. In G.C. Roberts (Ed.), Motivation in sport and exercise (pp.199-215). Champaign, IL: Human Kinetics.
- Scanlan, T. K., Stein, G. L., & Ravizza, K. (1989). An in-depth study of former figure skaters, 11: Sources of Enjoyment. Journal of Sport and Exercise Psychology, 11, 65-83.

RECOMMENDED ITF TENNIS COACH CONTENT (CLICK BELOW)

Tennis  **iCoach**

Tennis player development: From junior to professional transition stage

Pancho Alvariño, José F. Altur and Miguel Crespo (ESP)

ITF Coaching and Sport Science Review 2016; 68 (24): 24 - 26

ABSTRACT

This article justifies the reasons why, in our opinion, the transition from junior to professional is the most important development stage for a tennis player since it will determine his or her future. The development process and plan must be carried out on an ongoing basis, since there is little time, in general, not more than three years. The coach must facilitate the development of the plan with his knowledge and help the player to meet his/her goals in this stage.

Key words: phases, evolution, long term, planning

Corresponding author: pancho@tennisval.es

Article received: 11 January 2016

Article accepted: 11 February 2016

INTRODUCTION

One of the toughest, and at the same time most fascinating tasks of the tennis world occurs when a player with potential “falls” into the hands of the coach who has to plan and programme their career, that is to say, be responsible for their development. The work with young players is a long term job, using a methodology that respects the different evolution stages of the player.

The coaching period is key for players to develop the future skills that are necessary for the physical, mental, technical and tactical qualities to compete safely against all types of players when they reach elite level.

Certainly, this period is getting shorter and shorter. Girls start playing tennis earlier, and often they specialise much earlier than desirable, so they skip many developmental stages. Because of this, it is necessary to go backwards later, and stop their evolution in order to work on what was not done in due time. Besides, the players run the risk of injuries because their bodies are not well prepared to work with greater volumes of physical and psychological loads.

STARTING AGES AND TARGETS

Some specialists set the appropriate age to begin playing tennis at 5, because at that age kids already have a better control of their movements. Table 1 summarises the ages top players started playing tennis. It shows that most of them started between 5 and 6 years.

Average tennis starting ages for the top hundred					
Rank	Player	Start	Start	Player	Rank
1	Djokovic	4	7	Wozniacki	1
2	Nadal	4	6	Clijsters	2
3	Federer	8	6	Zvonareva	3
4	Murray	3	7	Azarenka	4
5	Soderling	5	4	Sharapova	5
6	Ferrer	8	9	Li Na	6
7	Monfils	4	-	Kvitova	7
8	Fish	2	-	Schiavone	8
9	Berdych	5	6	Bartoli	9
10	Almagro	8	8	Stosur	10
11	Simon	6	6	Petkovic	11
12	Roddick	10	7	Kuznetsova	12
13	Gasquet	4	4	Radwanska	13
14	Youzhny	6	6	Pavluchenkova	14
15	Troicki	5	9	Jankovic	15
	Average	5.4	6.5	Average	

Table 1. Average starting age for the players ranked in the top 15 in the 2010-2011 season.

Table 2 summarises the general targets set during each different age in the career of tennis players (boy and girls).

Objectives during the different ages (boys and girls)		
Boys	Age	Girls
Begin	+/- 5 years	Begin
More specific exercises	6 years	More specific exercises
Technical work	9 years	Technical work
More demanding training	11 years	More demanding training
-	14/16 years	First top 10 ranking
First top 10 ranking	16/17 years	-
-	18 years	Among the top 100 (622)
Among the top 100 (922)	19 years	-
-	21 years	Greater percentage of victories no.1
Greater percentage of victories no.1	24 years	-
Retire	31 years	Retire

Table 2. Targets for tennis players (boys and girls) during the different developmental ages and stages.

Table 3 compares these objectives depending on the development ages and stages with those of Dinara Safina's. It is important to state that these tables are just for guidance, due to the individual nature of tennis, each player has his/her own progression, which can vary considerably depending on the cases.

Dinara Safina general objectives girls/age			
Dinara	Age	Age	Girls
Beginning	7 years	+/- 5 years	Beginning
Trained with her mother	-	6 years	More specific exercises
Trained with her mother	-	9 years	Technical work
Age moves to the academy	12 years	11 years	More demanding training
Won Tarbes (World under 14) 1 Final 10.000\$	14 years	14/16 years	First top 10 ranking (622)

Dinara Safina general objectives girls/age			
Dinara	Age	Age	Girls
Won 1st \$10,000. Year end WTA rank 394. Year end ITF junior rank no.9	15 years	18 years	-
Year end WTA rank no. 68	16 years	18 years	Among the top 100
Left the academy	17 years	19 years	-
Year end WTA rank no. 54	-	21 years	Greater percentage of victories no.1
Reaches WTA no. 1	23 years	24 years	-
Retires due to physical problems	26 years	31 years	Retire

Table 3. Comparison of the objectives of the girls depending on the developmental ages and stages with those of Dinara Safina's.

In the case of players with a future, the coach's priority is.... NOT TO DO THE WRONG THING! That is, not to make mistakes that put the career of a talented player at risk.

If the coach believes in the player, in his/her capabilities as a coach, and has the minimum resources available, the greatest issue for a player not to reach the top positions in the world, is when the coach makes a mistake or makes the wrong decision along the way,

Not to do the wrong thing implies respecting biological rhythm, programming for the long term, planning micro, meso and macro cycles, and anticipating future needs paying attention to the current level.

It is important to remember that not all players who try will become professionals. It is at that point when the coach, as a guide in the process, must be able to detect it in order to avoid frustrated players. Below are some suggestions about things to bear in mind during this stage.

PLAYER PROFILE

First, it is key to make a player profile, evaluating their conditions and defining their characteristics:

- Technical: basic strokes and natural talent.
- Tactical: playing pattern and solutions to win the points.
- Physical: endurance, mobility, speed, etc. on-court.
- Psychological: motivation, competitiveness.
- Previous results: information of competition and level played.

This process will help us to know the player's strong and weak points, so as to get all the information possible, to know where we are and where we want to go. The results of these evaluations will provide enough information about the future potential of the player.

GENERAL TRAINING PLAN

Once the player has been evaluated and we have collated as much data as possible, the next step will be to prepare a general training and competition plan considering the targets we want to reach during those 3 years of work (approximately).

This plan should have the following characteristics:

- Getting resources and funding- enough to cover coaching expenses, competition, travelling, material, accompanying people, medical treatment, etc.
- It must be realistic practical and ordered, with targets for the short, mid and long term.

- It has to be continuous- It should not be interrupted due to the importance of the phase, to the short time available, to the great competitiveness and the need to make decisions and to favour the constant progression and development of the player.

Then, it is necessary to make shorter training and competition programmes for the different phases of each season (ex. 4 to 6 weeks). Those programmes must include:

- Technique improvement and consolidation- strokes, intensity, control, strength, direction...
- Playing style- pattern for the conditions of the player.
- Physical conditioning- to improve their physical capabilities and prevent injuries.
- Mental training- concentration training, working habits, control of emotions, etc.

EXERCISES

Exercise 1

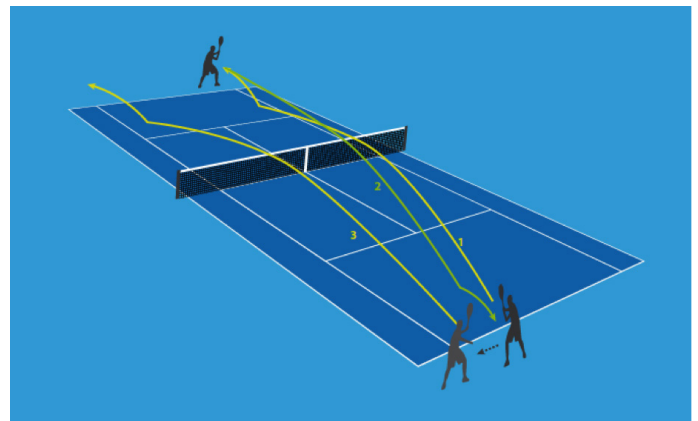
Name: Open the point with an inside-out.

Purpose: Tactical work, decision making on when and how to play inside-out, control strokes from the baseline and play points.

Methodology: Rally between players.

Description: The players rally with cross-court backhands from the baseline. The point will open when one of them can play an inside out. In the next point, the other player will open the point.

Variants, volume and intensity: Cross-court backhand from the baseline, this time just using the sliced backhand. The point is open when a player hits inside out. They play cross-court backhands from the baseline and both can change and play down-the-line any time. When its their turn to play inside out, either of them can open the point freely. When changing the down-the-line backhands, if the opponent touches the ball they will win the point. If it is a winner down-the-line backhand, the winner of the point will be the player who played it. (Exercise appropriate for women's tennis).



Exercise 2

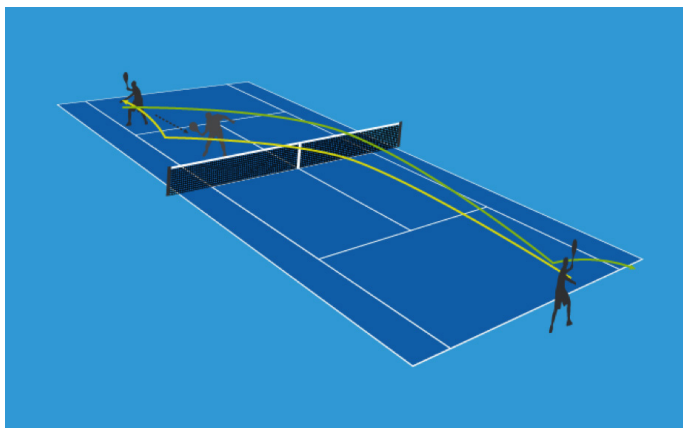
Name: Short approach ball and volley.

Purpose: Transitions. Adjust the steps to try to hit the short ball as early as possible, to be able to move quickly to the net, so as to cover the court and volley safely.

Methodology: Rally with the coach.

Description: The coach is on one side of the court. They play a short ball and the first player hits a forehand to the coach who will return for the player to volley to the same side. The ball is still in play, the second player comes in doing the same thing, and so on and so forth.

Variants, volume and intensity: It is possible to play long series, looking for volume or shorter series, calling points, in that case, rushing the net to the correct side, but the passing shot and volley are free.



Exercise 3

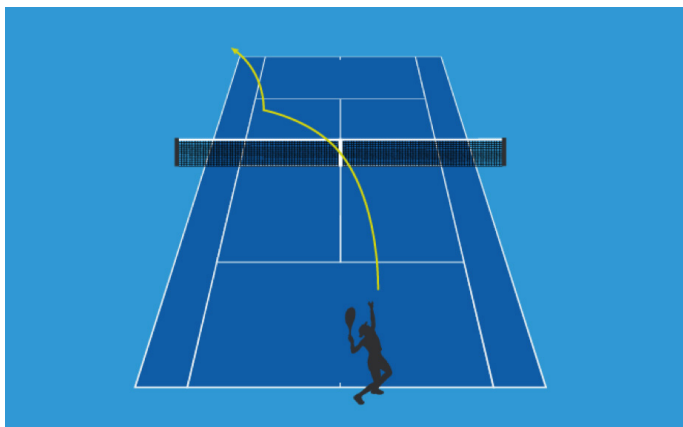
Name: Playing against yourself.

Purpose: Concentration, second service, directions.

Methodology: Buckets or basket.

Description: The coach is on one side of the court. They play a short ball and the first player hits a forehand to the coach who will return for the player to volley to the same side. The ball is still in play, the second player comes in doing the same thing, and so on and so forth.

Variants, volume and intensity: It is possible to play long series, looking for volume or shorter series, calling points, in that case, rushing the net to the correct side, but the passing shot and volley are free.



COMPETITION

After the working period based on previous contents, the player will compete, and for that, it is very important to make an appropriate selection of tournaments according to the competition calendar, which should include:

- Attainable level tournaments- Where the player competes to win, with the pressure that the result is important.
- Higher level tournaments- In order to improve and get familiar with a higher performance level, to be taken as a landmark for progression.
- Valuation of results and ranking- To programme future competition, considering the progression of the player and the importance of going through the upper stages.

CHALLENGES

All along the player career path, it is necessary to constantly set new challenges. Tennis is a continuous evolution and for this evolution to happen, players must achieve a polished technique. The better the technique, the more capacity they will have to develop a more versatile tennis game, and the greater options for more appropriate tactics. Initially, to get the first qualification, then, to go on progressing and reach the top 500, then the top 300, 200, 100, 70, 50, 20...

When the targets are met, the player must be given new weapons to reach the next target. Here, the player's motivation and ambition are key to work and meet the new targets. When this evolution is interrupted, there is no more progress and the player reaches stagnation and starts declining.

CONCLUSION

Finally, it is key to insist on the importance of planning, the honesty and communication with the player, and their environment (family, sponsors, federation...) since we are working and coaching youngsters with great potential, talent and dreams.

REFERENCES

- Alvariño, P., Altur, J.F. y Crespo, M. (2015). *Tenisval: Filosofía, sistemas de entrenamiento y ejercicios*. Valencia. Spain.
- Crespo, M., Granitto, G., Miley, D. (2002). *Trabajando con jóvenes tenistas*. ITF Ltd. Londres.
- Fernández-Fernández, J., Méndez-Villanueva, A., Sanz, D. (2012). *Fundamentos del entrenamiento de la condición física para jugadores de tenistas en formación*. RFET. Barcelona.
- Reid, M., Quinn, A., Crespo, M. (2003). *Fuerza y condición física para el tenis*. ITF Ltd. London.
- Roetert, P., Ellenbecker, T. (2008). *Preparación física completa para el tenis*. Tutor. Madrid.

[RECOMMENDED ITF TENNIS ICOACH CONTENT \(CLICK BELOW\)](#)

Tennis iCoach

The evolution of online education for sports coaches: A tennis perspective

Richard Sackey-Addo (GBR) and Javier Pérez Camarero (ESP)

ITF Coaching and Sport Science Review 2016; 68 (24): 27 - 28

ABSTRACT

This article looks at how modern coach education has progressed with the development of more resources and online learning platforms dedicated to informal and distance-learning based courses for coaches and what the effects of this means for the future of coach education courses for coaches and tutors.

Key words: distance-learning, coach education, visual learning

Article received: 11 January 2016

Corresponding author: coaching@itftennis.com

Article accepted: 15 February 2016

INTRODUCTION

The transition in the processes and methodology of knowledge acquisition for the modern tennis coach now gives rise to an increasing body of research that is focused on gaining a better understanding of the most effective ways for coaches develop their craft and learn how to coach (Cushion et al., 2010). It has been stated that the three most fundamental questions to be considered with regard to the development and assessment of coaches are; what knowledge should be taught to novice coaches? What is the optimal method for teaching this knowledge? And how should assessing be carried out in order to optimally encourage the continuation of learning throughout a coaches' career? (Abraham, Collins, 1998). The continual efforts from National Tennis Associations and the introduction of successful ITF participation initiatives, such as the Junior Tennis Initiative and Play and Stay, and the increasing high standards at the elite level of the game make it more necessary than ever for coaches to be suitably qualified, competent and have necessary opportunities for continued professional development available to them.

The effectiveness of coach education programmes has been identified as a key factor in the development of quality coaches with recent emphasis being placed on strategic appraisals of coaching and coach education which have contributed to the emergence of national benchmarks/standards for practice in sub-elite coaching across National Governing Bodies (NGB's) and International Federations (IF's) (Knowles et. Al 2005).

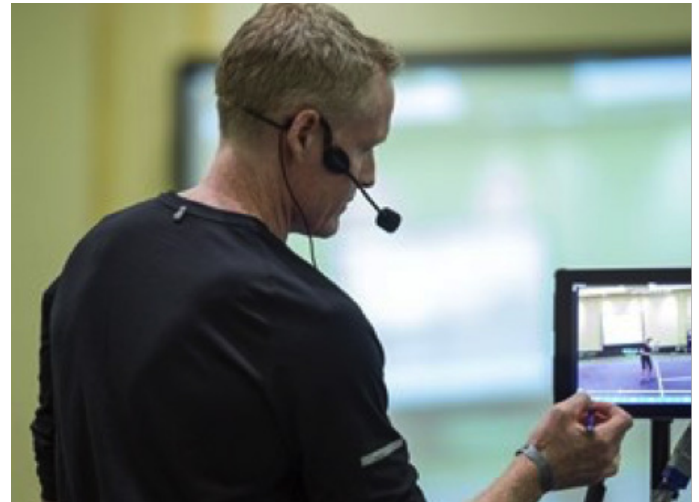
ONLINE LEARNING PLATFORMS

The evolution of technology and the ease in which information can be sought has been taken advantage of by IF's and NGB's. "Traditional" eLearning modules comprise various formats, such as Computer-Based Training (CBT), Web-Based Training (WBT), Web-Lectures (WL) and Web-Meetings, sometimes in stand-alone versions and sometimes in combinations of these (Mester, Wigger, 2011). As with regards to online courses and education platforms, from the perspective of a coach, everything is easy to find and coaching information is at your fingertips. You can take the right information out easily and at the right time (Elderton, 2013). However, it has been suggested to use a wide range of training methods, from the traditional lecture format through to video, online learning and, of course, actual teaching sessions during which your students will be responsible for players under your supervision (Pestre, 2013).

In the case of the Royal Federación Española de Tenis (RFET) it was identified that one of the main reasons that coaches do not attend educational events is the lack of time and economic resources. Therefore, the Federation introduced a number of online educational plans that have proven to be very successful, both from the point of view of the feedback provided by the coaches as well as the number of people enrolled.

Practical applications

- In the case of the Royal Federación Española de Tenis (RFET) it was identified that one of the main reasons that coaches do



not attend educational events is the lack of time and economic resources. Therefore, the Federation introduced a number of online educational plans that have proven to be very successful, both from the point of view of the feedback provided by the coaches as well as the number of people enrolled.

- Educational technologies available today in conjunction with the advances of the internet, have had a tremendous impact on the availability and ease of access to information for coaches. Learning resources such as ITF Tennis iCoach serve as an example of where coaches are able to access up-to-date and continuous education resources with ease, thus allowing for more continuous education during their career should the coach choose (Over & Sharp, 2008). Whatever is done to make education more attractive, functional and practical for coaches will ultimately serve to have a positive effect on the quality of coaches worldwide.









Benefits

Some studies have concluded that there are no significant differences in results between online training and classroom (Barry, Runyan, 1995). However, the argument can be stated that through online educational/CPD platforms, coaches can now make better use of their time by being able to draw on these resources at a time and place that is best appropriate to them, a key factor to consider for tennis coaches who may spend most of their time on-court or travelling with players. Thanks to online educational platforms, coaches do not need to have to book a weekend or several days off or deal with problems of cancellation of courses that can be attributed to classroom environments.

Another of the important advantages offered from online training is the opportunity to obtain information repeatedly. We can see a video conference or exercise, pause, rewind and replay as many times as you want and tutors can also take advantage of these online resources for teaching students when in a classroom.

Result **Mental**

1 2 3 Next Sort by Date and relevance

	<p>Interview with Lucie Ahl - Junior Fed Cup captain of Great...</p> <p>Captains of the ITF Junior Davis Cup and Fed Cup by BNP Paribas...</p>		<p>Winning</p> <p>Ann Quinn shares her experience of working with Grand Slam...</p>
	<p>The architecture of quality tennis coaching</p> <p>This presentation is from the 2015 LTA Coaches' Conference at the...</p>		<p>On court psychological drills for 14 & under players</p> <p>Sport psychologists and coaches aim to improve the mental...</p>
	<p>Coach resilience: What it means, why it matters and how to...</p> <p>Resilience is not an innate capacity but rather develops over...</p>		<p>Off-court battle with binge eating: Coaches must be part of the...</p> <p>Binge eating is an eating disorder defined as the recurrent</p>
	<p>Key technical priorities for the development of high...</p> <p>During the 2013 Worldwide Coaches Conference in Mexico, Jorge...</p>		<p>Being good mentally: What does it mean?</p> <p>The ideal performance state, flow, and psychological resilience...</p>

Elderton, W. (2013). Principles of modern coaching methodology: An evolution, 60, 8-9.

Felder, R. M. & Silverman, L.K. (1988) "Learning and Teaching Styles in Engineering Education". *Engr. Education*, 78(7), 674-681.

Mester, J. & Wigger, U. (2011). Online resources for coaches education: Motivation for applied Intellectual Capital Management in tennis, 54, 19-20.

Over, S. and Sharp, B. (2008). Information Technology in tennis. *ITF Coaching and Sport Science Review*. 15 (45): 24-25.

Oxford, R. L., Hollaway, M. E. & Horton-Murillo, D. (1992). Language learning styles: Research and practical considerations for teaching in the multicultural tertiary ESL/EFL classroom. Recuperado en marzo de 2010, de www.ukessays.com/essays/english-idioma/aprendizaje-estilos. Php.

Pestre, B. (2013). Teacher education on court, 60, 24-25.

Reid, J. M. (1995). *Learning Styles in the ESL/EFL Classroom*. U.S.A.: Heinle & Heinle Publishers.

RECOMMENDED ITF TENNIS ICOACH CONTENT (CLICK BELOW)



Online education tips

The following can be considered when choosing an appropriate online education course:

- Is there an online course community for discussions, blogs etc. – Opportunities to network and share discussion topics with other likeminded professionals can be advantageous in allowing interaction between coaches and experts with different experiences and backgrounds and learning from others and are the online equivalent of discussions in a classroom environment.
- How long is the course/individual units – Often for coaches, it is not possible to be able to balance several hours, weeks or even months at a time working through content, due to this shorter courses requiring less demands on time can be recommended.
- Is the course endorsed by a reputable organisation/governing body – As is becoming more common, more national and international sports federations are providing and endorsing courses held by external companies.
- Where can the course content be accessed – In an era where laptops, tablets and smartphones are common items of technology to have amongst most coaches it is important that coaches can access content anywhere and anytime to a variety of different devices.
- Will the certificate of attendance or qualification at the completion of the course be recognised – The certificate of attendance or qualification gained at the end of the course should ensure that the competencies covered will enhance your continued professional development and career opportunities.

CONCLUSION

It is important to insist on utilisation of good quality resources and material obtained through online education platforms as the benefits apply not just to tennis coaches but to course tutors who can also make use of, in a classroom setting, using a tablet or laptop to display demonstrative training content so that coaches are able to learn through more direct, visual and time-efficient means.

REFERENCES

Abraham, A., & Collins, D. (1998). Examining and extending research in coach development. *Quest*, 50(1), 59-79.

Barry, M. & Runyan, G. (1995). A review of distance learning studies in the U.S. military. *The American Journal of Distance Education*, 9 (3).

Cushion, C., Nelson, L., Armour, K., Lyle, J., Jones, R., Sandford, R., & O'Callaghan, C. (2010). *Coach learning and development: A review of literature*. Leeds: Sports Coach UK.

Recommended e-books

TECHNIQUE DEVELOPMENT IN TENNIS STROKE PRODUCTION

Authors: Bruce Elliot, Machar Reid, Miguel Crespo Year: 2009. Language: English. Type: e-book.
Level: Advanced. Year: 2009.

The ITF Technique Development in Tennis Stroke Production e-book aims to outline the mechanical basis of stroke development from a scientific perspective. What science tells us about stroke production in relation to player development, not opinions, forms the basis for understanding stroke structure over various developmental stages. This is one of the resources that form part of the ITF Coaches Education Programme, which is currently being used in over 80 of the ITF's member nations. Complete with practical examples and theoretical information, this ITF publication reflects the ITF's ongoing role in making available the most up-to-date tennis-specific training information to players and coaches worldwide. Please click here to purchase your copy.



DEVELOPING YOUNG TENNIS PLAYERS

Authors: Miguel Crespo, Gustavo Granitto, Dave Miley. Language: English, French and Spanish. Type: e-book.

Level: Intermediate and advanced. Year: 2002.

ITF Developing Young Tennis Players is a manual for working with 10 to 14 year old tennis players. It presents the principles and fundamentals of the International Tennis Federation Programme for 14 & Under Players. This book also presents more than 50 tennis drills and exercises directed to junior tennis players. The drills in this e-book are presented in a progressive way, by using the criteria of the modern teaching methodology. If you are a tennis player, coach or parent, ITF Developing Young Tennis Players has everything you need to improve your knowledge in junior player development. Please click here to purchase your copy.

STRENGTH AND CONDITIONING FOR TENNIS

Authors: Machar Reid, Ann Quinn and Miguel Crespo. Language: English and Spanish. Type: e-book.
Level: Intermediate and advanced. Year: 2003.

The ITF Strength and Conditioning for Tennis e-book provides a detailed analysis of strength and conditioning specific to the tennis players. Complete with theoretical information and practical training exercises from some of the tennis world's leading physical training experts, this publication reflects the ITF's ongoing role in making available the most up-to-date tennis specific training information to players and coaches worldwide. Please click here to purchase your copy.



COACHING BEGINNER AND INTERMEDIATE TENNIS PLAYERS

Authors: Miguel Crespo and Machar Reid. Language: English, French and Spanish. Type: e-book.
Level: Beginner to advanced level. Year: 2009.

This e-book (320 pages) forms part of the ITF Coaching Beginner and Intermediate Tennis Players (former Level 1) syllabus. Designed for coaches working with beginner and intermediate players in schools and clubs, the manual is one of the few tennis resources that provides comprehensive information, both practical and scientific, on all elements of the game as related to coaching players of these playing levels. It includes practical and theoretical information on coaching knowledge, applied sport science, tactics and technique, biomechanics and movement, physical conditioning, programmes, plus much more. Please click here to purchase your copy.

Recommended web links

WTA POWER TO INSPIRE

TOURNAMENTS PLAYERS SCORES & STATS RANKINGS NEWS PHOTOS VIDEOS HEALTH FANS SHOP

SERENA: SI SPORTSPERSON OF THE YEAR
Serena Williams has been named the 2015 Sports Illustrated Sportsperson Of The Year, honored for her transcendent performance and character on and off the court.

NEWS ALL NEWS PHOTO GALLERY

How Many Majors Will Serena Win In 2016?
Celebs Are Praising Serena Williams
Serena Williams & The Live Ultimate Fun

HOME HOW TO GRADUATE JUNIOR FORUMS HELP CONTACT US

ITF JUNIOR TENNIS SCHOOL

Click HERE to START

eLearning Modules

ITF JUNIOR TENNIS SCHOOL

Username:
Password:

The ITF recognises its responsibility towards helping the on and off court development of junior players.

ITF TENNIS.com International Tennis Federation

COACHING ITF

NEWS COACH EDUCATION COURSES CONFERENCES COACHING & SPORT SCIENCE REVIEW RESOURCE CENTRE

ITF Regional Coaches Conference
by BNP Paribas
Conference Information Here

UPCOMING COACHING COURSES, WORKSHOPS & WEBINARS

26 January - 24 April
ITF Coaching Beginner & Intermediate Players Course (Beginner, Intermediate, Senior, Junior, Girls, Boys, L1, B1, B2, B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B20, B21, B22, B23, B24, B25, B26, B27, B28, B29, B30, B31, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B42, B43, B44, B45, B46, B47, B48, B49, B50, B51, B52, B53, B54, B55, B56, B57, B58, B59, B60, B61, B62, B63, B64, B65, B66, B67, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80, B81, B82, B83, B84, B85, B86, B87, B88, B89, B90, B91, B92, B93, B94, B95, B96, B97, B98, B99, B100)

Uzbekistan host successful Level 1 course
ITF Coaching Beginner & Intermediate Tennis Players Course took place at the Republican State Tennis School of Olympic Reserve in Tashkent, Uzbekistan.

Expert resources for players & coaches
COACHING RESOURCES
PLAY+STAY
tennisplayandstay.com

PLAY+STAY TENNIS IS EASY, FUN & HEALTHY

TENNIS10S AGE 11-17 TENNIS EXPRESS ITN CLUBS COMPETITION HEALTH EQUIPMENT FEDERATIONS ITF

RULE THE COURT
tennis 10s

BUY THE BALLS HERE!!!
Free Delivery
Minimum Quantity applies

ABOUT PLAY+STAY
RESOURCES

TENNIS PLAY AND STAY NEWS
Important Changes to the Green
The Green ball has been used in 10...

YOUTUBE - SERVE RALLY SCORE
LISTA DE REPRODUCCION Videos subtitulados

FACEBOOK - SERVE RALLY SCORE
Tennis Play and Stay

ITF TENNIS.com International Tennis Federation

DEVELOPMENT ITF

NEWS ABOUT DEVELOPMENT DEVELOPMENT OFFICERS PLAYER DEVELOPMENT NATIONAL ASSOCIATIONS

UPCOMING DEVELOPMENT EVENTS

11 - 16 August:
East Pacific Regional Event (12&U, 14&U, 16&U and 18&U) American Samoa

18 - 27 August:
Pacific Oceania Junior Championships (12, 15 and 18 & Under) Fiji

31 August - 13 September:
ITF/ATP Development Training Camp for JTI players

Click here to view the full 2014 events calendar

TOURING TEAMS

LATEST NEWS
Lithuania headlines ITF West Asian

TennisCoach

Technical Tactical Physical Mental Medical Player Coach Parent Tutor

Physical training: short, middle, long distance footwork training

Latest Content

Development of the game of doubles on the orange court
Skill acquisition in tennis: Research and practice
The volley in today's tennis: Challenges and opportunities
ABC of core training
Physical training: short, middle, long distance footwork training

Recommended Content

On-court conditioning: Cervical Speed
The game of tennis places unique physical demands on the...
Wheelchair tennis: On court speed and strength drills
Coordination drills for
Agility and balance drills

ITF store

Home Publications DVDs - CDs Clothing Gifts & Accessories My Account

Search Go

Customer Login
Email:
Password:
Login
Forgot password?
New Customer?

Official Davis Cup by BNP Paribas merchandise

Top Buys
1 ITF Biomechanics of Advanced Tennis \$25.00

Recommendations

payments powered by RBS WorldPay

WORLD ANTI-DOPING AGENCY
play true

Media Center | FAQ | Find Us on Social Media
English

HOME ABOUT WADA WORLD ANTI-DOPING PROGRAM ANTI-DOPING COMMUNITY SCIENCE & MEDICINE EDUCATION & AWARENESS

Home > Education & Awareness > Tools for Stakeholders > For Coaches

CoachTrue - Elite
CoachTrue - Computer-based anti-doping learning tool
In order to cater to the various learning styles and demanding schedules of coaches, WADA has created CoachTrue.

ENGLISH • FRANÇAIS • ESPAÑOL

On your marks, get set, GO!
CoachTrue
Pre-test | Post-test | Game | Glossary | About

Education & Awareness
Youth Zone
Play True C
Outreach P
Tools for S
For Progr
For Coac

CoachTrue
Coach
For Team
For Sport
Play True
For Doping
Doping C
Dangers o
Choose Y

General guidelines for submitting articles to ITF coaching & sport science review

PUBLISHER

International Tennis Federation, Ltd.
Development and Coaching Department.
Tel./Fax. 34 96 3486190
e-mail: coaching@itftennis.com
Address: Avda. Tirso de Molina, 21, 6^a - 21, 46015, Valencia (España)

EDITORS

Miguel Crespo, PhD. and Luca Santilli

ASSOCIATE EDITORS

Richard Sackey-Addo, MSc.

EDITORIAL BOARD

Alexander Ferrauti, PhD. (Bochum University, Germany)
Andres Gómez (Federación Ecuatoriana de Tenis, Ecuador)
Ann Quinn, PhD. (Quinnesential Coaching, UK)
Anna Skorodumova PhD. (Institute of Physical Culture, Russia)
Babette Pluim, M.D. PhD. (Royal Dutch Tennis Association, The Netherlands)
Bernard Pestre (French Tennis Federation, France)
Boris Sobkin (Russian Tennis Federation, Russia)
Brian Hainline, M.D. (United States Tennis Association, USA)
Bruce Elliott, PhD. (University Western Australia, Australia)
David Sanz, PhD. (Real Federación Española de Tenis, Spain)
Debbie Kirkwood (Tennis Canada, Canada)
E. Paul Roetert, PhD. (AAHPERD, USA)
Hani Nasser (Egyptian Tennis Federation, Egypt)
Hans-Peter Born (German Tennis Federation, Germany)
Hemant Bendrey (All India Tennis Association, India)
Hichem Riani (Confederation of African Tennis, Tunisia)
Hyato Sakurai (Japan Tennis Association, Japan)
Janet Young, Ph.D. (Victoria University, Australia)
Kamil Patel (Mauritius Tennis Federation, Mauritius)
Karl Weber, M.D. (Cologne Sports University, Germany)
Kathleen Stroia (Womens Tennis Association, USA)
Louis Cayer (Lawn Tennis Association, UK)
Machar Reid, PhD. (Tennis Australia, Australia)
Paul Lubbers, PhD. (United States Tennis Association, USA)
Mark Kovacs, PhD. (Director, GSSI Barrington, USA)
Per Renstrom, PhD. (Association of Tennis Professionals, USA)
Stuart Miller, PhD. (International Tennis Federation, UK)

TOPICS & SCOPE

ITF Coaching and Sport Science Review considers for publication original research, review papers, opinion pieces, short reports, technical notes, topical lectures and letters in the disciplines of medicine, physiotherapy, anthropometry, biomechanics and technique, conditioning, methodology, management and marketing, motor performance, nutrition, psychology, physiology, sociology, statistics, tactics, training systems, and others, having specific and practical applications to tennis coaching. The intended readership of the publication is directed to all those involved in, and interested in coaching methodology and sport sciences relating to tennis.

PERIODICITY

ITF Coaching and Sport Science Review is published tri-annually in the months of April, August and December.

FORMAT

Articles should be word-processed preferably using Microsoft Word, but other Microsoft compatible formats are accepted. The length of the article should be no more than 1,500 words, with a maximum of 4 photographs to be attached. Manuscripts should be typed, double spaced with wide margins for A4-size paper. All pages should be numbered. Papers should usually follow the conventional form: abstract, introduction, main part (methods and procedures, results, discussion / review of the literature, proposals-drills-exercises), conclusions and references. Diagrams should be done using Microsoft Power Point or any other Microsoft compatible software. Tables, figures and photos should be relevant to the paper and should have self explanatory captions. They should be inserted in the text. Papers should include between 5 and 15 references that should be included (author/s, year) where they occur in the text. At the end of the paper the whole reference should be listed alphabetically under the heading 'References' using the APA citation norms. Please refer to <http://www.apastyle.org/> for guidelines and tutorials. Headings should be typed in bold and upper case. Acknowledgement should be made of any research grant source. Up to four keywords should also be given and the corresponding author contact details.

STYLE AND LANGUAGES OF SUBMISSION

Clarity of expression should be an objective of all authors. The whole emphasis of the paper should be on communication with a wide international coaching readership. Papers can be submitted in English, French and Spanish.

AUTHOR(S)

When submitting articles authors should indicate their name(s), nationality, academic qualification(s) and representation of an institution or organisation that they wish to appear in the paper.

SUBMISSION

Articles may be submitted at any time of the year for consideration for future publication. Articles should be sent by e-mail to Miguel Crespo ITF Development Research Officer to the following e-mail address: coaching@itftennis.com. In calling for papers, the Editors ask that contributors adhere strictly to the guidelines. Views expressed by contributors are their own and not necessarily those of the Editors or publisher.

REVIEW PROCESS

Manuscripts with insufficient priority or quality for publication are rejected promptly. Other manuscripts are reviewed by the editors and associate editor and in some instances, articles are sent for external review to expert consultants on the editorial board. Author identities are known by reviewers. The existence of a manuscript under review is not revealed to anyone other than peer reviewers and editorial staff.

NOTE

Please note that all articles commissioned for ITF Coaching & Sport Science Review may also be used on the ITF's official website. The ITF reserves the right to edit such articles as appropriate for the website. All articles online will receive the same credit as in ITF Coaching & Sport Science Review.

COPYRIGHT

All materials are copyright. On acceptance for publication, copyright passes to the publisher. Submission of a manuscript for publication involves the assurance that it has not been and will not be published elsewhere. The responsibility for ensuring this rests with authors. Authors who breach this assurance will be ineligible for future publication in ITF CSSR.

INDEXING

ITF CSSR is indexed in the following databases: COPERNICUS, DIALNET, DICE, DOAJ, EBSCO HOST, LATINDEX, RESH, SOCOLAR, SPORT DISCUS



ITF Ltd, Bank Lane, Roehampton,
London SW15 5XZ
Tel: 44 20 8878 6464
Fax: 44 20 8878 7799
E-mail: coaching@itftennis.com
Website: <http://en.coaching.itftennis.com/home>
ISSN: 2225-4757
Foto Creditos: Gabriel Rossi, Paul Zimmer,
Sergio Carmona, Mick Elmore, ITF

ITF Coaching and Sport Science Review:
www.itftennis.com/coaching/sportsscience

ITF Coaching:
<http://en.coaching.itftennis.com/home>

ITF Development:
<http://www.itftennis.com/development/home>

ITF Tennis Play and Stay website:
www.tennisplayandstay.com

ITF Tennis iCoach website:
<http://www.tennisicoach.com/en/home>

ITF Store:
<https://store.itftennis.com>

ITF Junior Tennis School:
www.itfjunortennischool.com/

ITN:
www.itftennis.com/itn/