



Using apps to improve coaching: The Tennis Australia Technique App.

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ABSTRACT

This article will describe how using apps can improve your coaching, detail the benefits of video analysis and explain the functionality of the Tennis Australia Technique App. It will also detail how the appropriate skill development and technique information for Red (5 – 8 years), Orange (8 – 10 years), Green (9 + years) and Yellow stage players can be communicated to players of that age.

Key words: Apps, Coaching, Technique, Analysis.

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INTRODUCTION

In 2012, consumers spent on average two hours each day using apps, an increase of 35 percent over last year. There are in excess of 800,000 Apple Apps and 700,000 Android Apps available to consumers and this number will continue to grow in 2013. Apps are easy to use, easily accessible, inexpensive and available on a variety of platforms. There are apps available for everything imaginable, with an average retail price of US \$1.58. Apps for teaching and education are the second most popular category (behind games). Many video analysis apps exist for sport, including tennis: Ubersense, Coaches Eye, Tennis Coach Plus HD, SwingReader, SwingPlane HD, MiiMOVE, Excelade and now the Tennis Australia Technique App.

The use of innovative analysis tools such as apps can improve coaching, engage players and demonstrate that the coach is up to date with modern technology. Video analysis provides a powerful tool that gives the player evidence of where they are at technically and also allows for improvements to be tracked over time. It also allows for information to be shared and communicated via popular social media.

The benefits of using apps to improve coaching

The eye can only process about 10 frames per second and perceive them individually yet the use of the built in cameras in mobile devices allow a coach to capture 25 images per second. Capturing 25 images per second combined with the ability to pause, advance or go back frame by frame and zoom in is a significant advantage in analysing a player's technique because you can detect detail that you otherwise would not.

We also know that many learners prefer a visual learning style compared to an auditory learning style (VARK), these findings endorse the use of video analysis that can be easily implemented via video analysis apps on mobile devices (Apple and Android).

Some of the most important benefits of using a video analysis app are that it creates a record of performance of the stroke so that improvement can be tracked over time. Likewise, regressions in technique can be easily identified, recorded and presented to the player to get them back on track quickly.

The use of video analysis apps can provide evidence to players and parents that they are improving. The use of innovative apps with many annotation tools and functionality is engaging and promotes the coach as up to date with modern technology and can be seen as a value add benefit. One of the most critical benefits is that these types of apps provide real time analysis and feedback that can be provided to the player/coach, often opening up previously untapped communication channels between all of the stakeholders involved in the player's development.

TENNIS AUSTRALIA TECHNIQUE APP FUNCTIONALITY

Record vision

Vision can be recorded on the device (e.g. iPad or iPhone) easily via the record button. It is recommended that you position yourself so that the player being filmed fills up most of the screen and that you are perpendicular (at right angles) to the component of the stroke you wish to analyse.



Image 1: The single-handed return of serve comparison of an Orange stage (top) v Green stage (bottom) player.

Compare

One of the most common and informative functions of the Tennis Australia Technique App is the ability to compare your player side by side. This functionality allows the coach to comment on the differences (and similarities) of the player's stroke and the correct technique.

Additionally it is valuable and motivating for the player to compare earlier versions of his/her stroke to view improvements. The Tennis Australia Technique App also has an overlay function where the transparency can be altered for the players being compared.

Analysis tools

The Tennis Australia Technique App has a number of annotation tools to highlight your analysis. The ability to draw lines, measure angles and insert shapes can be used effectively to highlight your analysis. Additionally, the ability to insert text, take screenshots and provide comments via the Voice Over function add to the analysis options available to the coach. It is recommended that a systematic observation of the player's technique occur so that the most appropriate intervention is offered. The use of the annotation tools should focus on primary flaws or serve to reinforce positive aspects of the player's technique.

Learn mode

The Tennis Australia Technique App has model strokes (Forehand, Double-handed backhand, Single-handed backhand, Backhand slice, Forehand volley, Backhand volley, Overhead, Serve, Forehand return of serve, backhand return of serve and Double-handed return of serve) for players of all

stages: Red (5 – 8 years), Orange (8 – 10 years), Green (9 + years) and Yellow ball. The Learn mode videos can be used as stand-alone videos to present ideal technique to a player or within the Compare mode via side by side or overlay functionality.

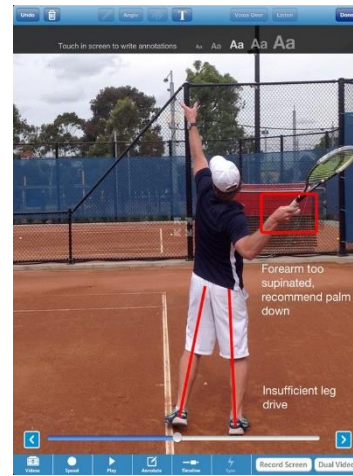


Image 2: A screen grab of some of the annotation tools to highlight the coaches analysis.

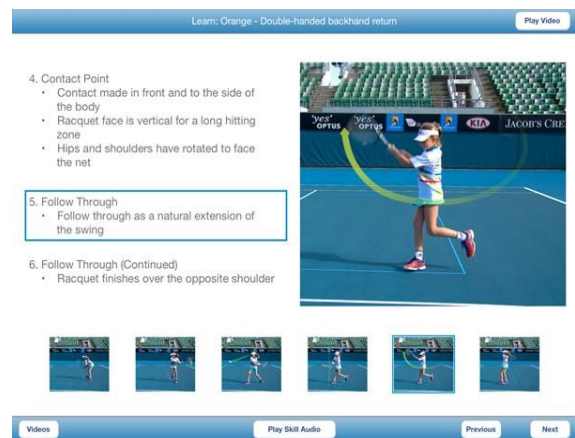


Image 3: The Learn mode information for the double-handed backhand return of an Orange stage player

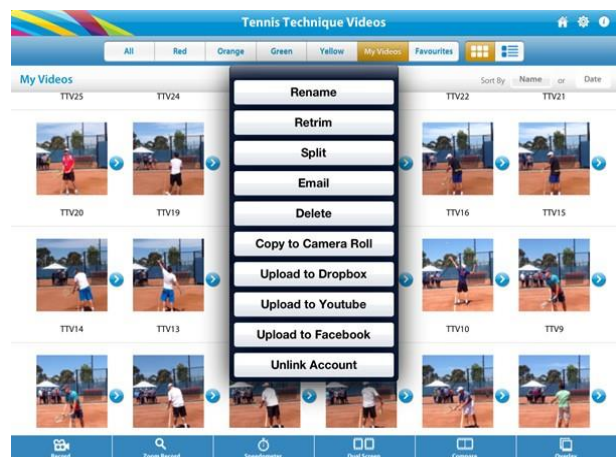


Image 4: The management and communication options for your files

The Learn mode offers the stroke fundamentals for the preparation, backswing, forwardswing, contact and follow-through for each of the strokes. The information and detail provided is relative to the stage of development. For example, compare the information given for the serve in the Red stage (5 – 8 years) and a Yellow ball stage (Table 1).

SERVE	RED STAGE (5 – 8 YEARS OF AGE)	YELLOW
Ready	Assume a basic side on position. Grip: #3 Eastern forehand grip to a #2 Continental grip.	Serving stance – within a range of acceptability. From 'feet perpendicular to the net, front foot angled towards the net post and back foot behind the front, parallel to the baseline shoulder width apart to a slightly closed stance. Non hitting hand supports the ball and throat of racquet. Grip: #2 Continental.
Backswing	Release ball toss at approximately eye level.	Able to achieve a coordinated throwing action. Tossing arm raises up towards the net post and ball released at about eye level. Palm of hitting arm remains down facing the ground. Rhythm: High point of toss equals high point of racquet (often called 'trophy' position). Transfer of body weight onto the back leg (Back knee flexion at $110^{\circ} \pm 10^{\circ}$).
Forwardswing	Elbow bends to initiate coordinated over arm throwing motion.	Elbow bends to initiate throwing motion. Extension of elbow up to impact. Racquet follows an upward swing path. Rhythm: Ball toss drop synchronised with leg drive up.
Contact Point	Achieve a basic coordinated throwing action.	Contact points vary due to the type of serve executed. Eyes focused on impact point. Shoulder over shoulder rotation evident. Shoulders rotate parallel to the net.
Follow through	Follow through as a natural extension of swing.	Achieve a balanced recovery.

Table 1: Serve content for Red Stage (5 – 8 years of age) and Yellow ball player.

Time Delay

The Time Delay function allows the coach to delay the action (by a range of 5 to 30 secs) so that players can view themselves and get immediate feedback. This function lends itself ideally to group sessions or squad sessions where the coach is using a traditional drill or a Spanish style drill with a pre-determined number of shots. An example could be the coach asking the players to highlight or emphasise leg drive on ground-strokes. Having completed the stroke/ drill, the replay is delayed by a pre-determined length of time, to enable players to observe their performance against the goal of using leg drive in ground-strokes.

Manage and communicate your files

The Tennis Australia Technique App has the functionality to easily manage and communicate your files. Your files can be named and renamed, trimmed, split and copied to the camera roll. Files can be communicated via email and uploaded to Facebook, YouTube and Dropbox.

This functionality is very useful to the coach. The coach is no longer required to transfer files from a video camera to his computer, open an analysis program, import the files and then analyse them. Consider a young player having a lesson with her coach, the coach can analyse the performance and immediately email to the parent who is watching the session from the side of the court and wants to view it on his/her phone, right there and then.

CONCLUSION

Players are becoming increasingly savvy with the use of technology. Coaches need to keep pace and the use of video analysis apps (this article featured the Tennis Australia Technique App) can improve coaching, especially as many learners are visual/kinaesthetic learners. Additionally, the files captured can motivate and engage the player even more as they have evidence of their improvement. Many annotation tools exist to assist the coach with their analysis and these can be easily communicated to many stake-holders. The Learn mode provides model strokes and content for all stages (ages) and all strokes. This allows the National Sporting Organisation (Tennis Australia) to provide a technical resource to many coaches and players.

So what's next? What other apps can improve coaching? Additional suggestions put forward include a Coach Activities App, Tactics App, Pro Player App, Hot Shots App, FPMS App, Cardio Tennis App, Movement App, Charting App, Strength & Conditioning App, Annual Plan App, Tennis in Schools App, Psychological Skills App, Competition Formats App and Tournament Formats App.

REFERENCES

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<http://www.vark-learn.com/english/page.asp?p=research>

<http://www.flurry.com/>

RECOMMENDED ITF TENNIS ACADEMY CONTENT (CLICK BELOW)



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