The Development of a Tennis-Specific Performance Behaviour Coaching Tool

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Abstract

Assessing psychological skills is crucial for the best possible development of high-performance tennis players. The already developed Performance Behaviour Coaching Tool (PBCT) (Blijlevens, 2019) assesses psychological skills in the form of performance behaviour, subdivided into fourteen competences. To fit this coaching tool into the context of tennis, the current research developed a Tennis-Specific Performance Behaviour Coaching Tool (T-PBCT), focusing on generating more action-based and tennis-specific competences. The first phase of the research consisted of a qualitative study containing a focus group in which four tennis experts shared their vision and knowledge on the fourteen competences in a tennis context. The subsequent deductive thematic analysis found six main terms represented in most competences (themes). Also, every competence contained one or more sub-term(s). Using this analysis, a draft of the T-PBCT was developed. After minor adjustments following feedback from four experts on different domains, the T-PBCT (130 questions) was established as feasible and valid. Following the qualitative part, quantitative research was conducted. Participants (N = 6) completed the T-PBCT twice within two weeks. Affected by a lack of power, the T-PBCT was not found to be reliable. Tennis-specificity is added to all competences, resulting in a more accessible and accurate coaching tool in a high-performance tennis context. The T-PBCT is shortened compared to the PBCT. Since the T-PBCT is still considered a time-consuming questionnaire, future research is recommended to assess to what extent the fourteen competences in this context are distinctive and how they influence performance in tennis.

Keywords: performance behaviour, competences, tennis-specific, coaching tool, high-performance.

The Development of a Tennis-Specific Performance Behaviour Coaching Tool

'Tennis is a mental game. Everyone is fit, everyone hits great forehands and backhands' - Novak Djokovic. As the (at this moment in time) 24-time Grand Slam champion illustrates, margins are minimal in the high-performance tennis setting. Psychological skills are a critical factor in this setting. How psychological challenges are handled is crucial when one desires to perform excellently in the high-performance domain (MacNamara et al., 2010a). Significant for this are one's psychological characteristics. An often-heard psychological characteristic is resilience: "the ability to withstand and cope with any stressors or major setbacks." (Kegelaers et al., 2021, p. 55). Another well-attended psychological characteristic is confidence: "having faith in one's talents and ability to achieve success." (Kegelaers et al., 2021, p. 55). A grasp of other commonly heard psychological characteristics facilitative for performance: hardiness, perseverance, motivation, and volition (Kegelaers et al., 2021, p. 52). Also, psychosocial characteristics like the five 5C's (Communication, Concentration, Control, Commitment, and Confidence) (Harwood, 2008) are examples of different characteristics deemed pivotal to developing and succeeding in a high-performance setting.

All athletes experience idiosyncratic challenges in different phases on the road to performing at the highest level. Coaches try to improve an athlete's performance by helping the athlete acquire new psychological and psychosocial skills through interactions with the coach (Arthur et al., 2017). For this reason, coaches need to be aware of the psychological and psychosocial challenges and when they roughly occur. This is valuable when players are prepared for and guided through occurring challenges to profit and learn the most from encountered challenges (Collins et al., 2019). This guidance in handling challenges on the road to mastery is needed since progressing from the talented youth level to the professional level is considered the most challenging and most complicated transition in sports (Stambulova, 2009). Following up on this, the current study focuses on establishing a

coaching tool for high-performance tennis players. Accordingly, it is crucial to target psychological and psychosocial skills that are the most relevant for this select group in a fitting context.

Psychological skills in sports

To perform, an athlete needs a wide range of psychological skills. The types of psychological skills athletes need differ from one situation to another. For example, psychological skills like positive thinking, self-talk, and reflection are associated with mental preparation for performance (Connaughton et al., 2008; Durand-Bush & Salmela, 2002). In the domain of life skills, interpersonal skills like social- and communication skills and personal skills like motivation and self-organisational skills are deemed important (Jones & Lavallee, 2009; Larsen et al., 2012; Woodcock et al., 2011). When wanting to perform at the desired moment, skills related to mental toughness, like focus, awareness, control of thought and performing under pressure, are regarded as crucial (Butt et al., 2010; Connaughton et al., 2008; Connaughton et al., 2010; Cook et al., 2014; Weinberg et al., 2011). Mastering a particular psychological skill mentioned above may be more crucial for one athlete than the other. This depends on the context (the sport played) and the athlete himself/herself.

An example of a well-known psychological skill every high-performance athlete needs to appeal to is the ability to perform under pressure. This psychological skill is deemed pivotal in situations appraised as important (Baumeister, 1984). Performance in situations like these is partially determined by the psychophysiological response to a stressor in a high-pressure moment (Blascovich, 2008*).* This response can invoke a desired, positive- (clutch) or an undesired, negative (choke) effect on the way someone performs (Otten, 2009). One can imagine the difference mastering this psychological skill can have on results. When an athlete wants to develop a psychological skill like performing under pressure, assessing the current skill level should be the start. The goal of the current study is to create a coaching tool in

which several critical deemed psychological and psychosocial skills are assessed in the context of tennis. Accomplishing this goal would increase the accuracy and effectiveness of assessing and developing these fundamental skills for high-performance tennis players.

Performance behaviour in sports

In the Netherlands, an athlete's daily responses to situations he/she is confronted with are covered by the umbrella term performance behaviour (Blijlevens, 2019). Performance behaviour is not a common term in (sport)psychology. Performance behaviour is a term resembling a package of psychological skills and characteristics athletes require in various stages on the road to elite performance and in daily life (Blijlevens et al., 2018). Performance behaviour integrates not only (psychological) skills but also the knowledge and attitudes one needs to handle the challenges daily life poses. The Dutch Olympic Committee and Sports Federation (NOC*NSF, 2019) defines performance behaviour as: “the behaviour, based on athletes’ psychological competences, that enables them to deal with the demands of the athletic career and leads to an optimal development and a maximum level of performance in sport”. In subsequence to the previous definition, psychological competences are (1) action-based, (2) context-specific, (3) learn- and evaluable, and (4) consist of and integrate different elements: knowledge, skills, and attitudes. (Bezanilla et al., 2014, p. 43). Some psychological competences are generic (common to multiple sports), and some are specific (belonging specifically to a sport) (Bezanilla et al., 2014, p. 43).

To help coaches guide their athletes through occurring challenges, the Performance Behaviour Coaching Tool (PBCT) (Blijlevens, 2019) is developed. The PBCT is a tool that assesses psychological competences in a high-performance sports setting. It is a practical coaching tool which enables coaches to determine the level of their high-performance athletes. The construction of the PBCT is partly based on the influential and broadly accepted Holistic Athlete Career (HAC) model (Wylleman & Rosier, 2016), which outlines three levels

of mastery in athletic development: the initiation-, development-, and mastery phase. The PBCT outlines identical levels of mastery within the competences assessing performance behaviour. In the first level of mastery (initiation phase), athletes participate in structured talent programs. This phase is characterised by challenges focusing on "maximising your potential". In the second level of mastery (development phase), the level of both training and competition increases, and the player engages in international youth tournaments. This phase adds challenges focusing on "working with your environment". In the third level of mastery (mastery phase), the player is at the highest athletic performance personally possible and participates at the highest level of competition within the sport. This phase adds challenges focusing on "delivering high performance" (Blijlevens et al., 2018, p. 77). Like the HAC model, the emphasis on competences is not equally distributed over time.

The PBCT consists of the fourteen generic psychological and psychosocial competences outlined in Figure 1. The fourteen competences in the PBCT are the product of a qualitative,

Figure 1

The fourteen competences in the PCBT (Blijlevens, 2019, p. 216).

The Ability to…

Focus	Adapt to changing circumstances
Make decisions and oversee its consequences	Communicate with your environment
Set and achieve goals	Persevere
Set and protect your boundaries	Create an optimal balance between all activities
Make and adhere to your planning	Perform under pressure
Identify and solve problems	Work process-oriented
Reflect on your development and performance	Be self-confident

deductive thematic analysis of interviews with high-potential and elite Dutch gymnasts (Blijlevens et al., 2018). In this study, all the fourteen competences were identified as overarching themes and could be placed in either the initiation-, the development-, or the mastery phase in the HAC model. Competences like the ability to be self-confident and the ability to focus were found to be relevant from the initiation phase on. In contrast, competences like the ability to adapt to changing circumstances and the ability to create an optimal balance between all activities were only starting to be found relevant in the mastery phase (Blijlevens et al., 2018). Because of the three phases and the peculiarity of challenges for athletes, the PBCT does not expect an athlete to master the fourteen competences all at the same time but over a time span of eight years (Blijlevens, 2019). Different competences can be developed at various moments throughout the years. The goal of the PBCT is for coaches to be able to guide their athletes and help them manoeuvre through the different phases of the fourteen competences.

PBCT in tennis

NOC*NSF uses the PBCT for the development of the Program Performance Behaviour to help athletes (aged 11-24) in the high-performance domain of TeamNL in dealing with the psychological and psychosocial challenges that arise during their sports career (NOC*NSF TeamNL, 2020a). Since the PBCT is not sport-specific, NOC*NSF recommends developing a sport-specific PBCT when sports federations want to use the tool for "their" sport. The Royal Dutch Tennis Federation (KNLTB), also part of TeamNL, already uses the PCBT in its youth program. The current study focuses on developing a tennis-specific performance behaviour coaching tool (T-PBCT) (Appendix A) for tennis players aged 11-24.

The sport of tennis is mainly defined as an individual sport. Players all have an idiosyncratic development. For this development, players must persevere, be disciplined, and be independent. Regarding performance, an individual playing tennis solely depends on

himself/herself (Šagát et al., 2021). Like players of other sports, tennis players are confronted with multiple sports-related factors like stress, performing under pressure, high training loads and the continuous demands of competition near/at the highest level (Guinoubi, 2022). The ability to persevere is a critical competence for tennis players to be successful (Šagát et al., 2021). The ability to communicate with your environment is also an important competence for tennis players since they need to communicate with their team. However, this competence could be more crucial for someone playing a team sport, who therefore is invoked on his/her interaction in the group process (Šagát et al., 2021).

Considering the above, one competence in the PBCT could be more relevant to tennis players than the other. Despite this, all fourteen competences will be included in the T-PBCT. The decision to include all fourteen competences was made since the fourteen competences together resemble performance behaviour (Blijlevens, 2019), and tennis professional tennis players need this performance behaviour to reach the top. Accordingly, developing a tennis-specific version of the PBCT seems the most suitable.

The current study aims to develop a tennis-specific performance behaviour coaching tool (T-PBCT) based on the PBCT (Blijlevens, 2019). To accomplish this, the study is split into two phases: a qualitative phase and a quantitative phase. The qualitative phase aims to develop the T-PBCT and expects to demonstrate its validity and feasibility in a high-performance tennis context. The quantitative phase expects to ascertain that the newly developed coaching tool is reliable.

Method

The current study is divided into two phases. The first phase (Qualitative Development phase) focused on developing a tennis-specific coaching tool based on the PBCT (Blijlevens, 2019). For this, a focus group (Redmond & Curtis, 2009) considering experts in the field of tennis was conducted at first. After analysing and implementing the results of the focus group,

the newly developed T-PBCT was critically examined by four experts. The Qualitative Development phase was concluded after their feedback was implemented and assessed for feasibility and face- and content validity. The second phase ((Quantitative) Reliability testing phase) involved statistical analysis and checking for the reliability of the T-PBCT. This was done by administering an online questionnaire version of the T-PBCT twice to professional tennis trainers/coaches who train high-potential Dutch tennis players. In both phases, participants were gathered with the help of the KNLTB. Based on a checklist developed by the EC-BSS at the University of Groningen, the study was in line with the ethical guidelines. Participation was voluntary. The participants actively signed the informed consent declaration before the focus group or questionnaire, respectively, commenced.

Qualitative Development phase

Participants

In the Qualitative Development phase, a focus group was conducted. The four participants (all men) in this focus group were selected based on their expertise in tennis. All participants worked for the KNLTB at the National Tennis Centre (NTC) in Amstelveen. Three participants were tennis trainers/coaches for high-performance tennis players. Whereas two tennis trainers/coaches had more than twenty years of job experience, one tennis trainer/coach had just over five years of job experience. The fourth participant was a sports scientist who worked at the NTC for over ten years. One participant did participate online with a Google Meet video call. The four focus group participants were awarded one Personal Development point (PO-point). Tennis trainers/coaches in the Netherlands are obligated to earn multiple PO-points every year to preserve their licence.

After the focus group, the first draft of T-PBCT was developed. Next, four experts in different domains affiliated with the new coaching tool were asked for feedback on the T-PBCT. All the experts have different relevant expertise. One expert (female) is a sports

scientist at the Rijksuniversiteit Groningen (RUG), one expert (male) is a sports psychologist working at the NTC, one expert is a tennis trainer (male) at the NTC, and one expert (female) is a sport psychologist focusing on children.

Procedure

The first step in the Qualitative Development phase was constructing the questions for the sound-recorded focus group. For every new competence, the same question was repeatedly asked: “How does this competence fit in the specific context of tennis?”. After this question, a conversation of approximately five minutes, in which the participants shared their thoughts on the topic, was conducted. The researcher directed the focus group by leading the conversation from one competence to the other, ensuring the participants did not deviate from the subject too much and guarding the time. While the participants were discussing, the researcher constructed a word web of the main points addressed per competence. Besides making notes, the goal of the word web was to generate a common goal for the participants in which they had to ensure that all the relevant topics were addressed and thereby written down. The focus group finished after 89 minutes.

The next step in this phase was developing a first draft of the T-PBCT. For an insight into this process, see Qualitative Development phase, Analysis.

In the last step of this phase, four experts were asked for feedback. First, the sports scientist at the RUG and the sports psychologist working for the KNLTB were requested for comprehensive feedback on the complete T-PBCT. After implementing this feedback, the tennis trainer at the NTC was asked to provide feedback on the feasibility while imagining filling out the T-PBCT for one of his pupils. Simultaneously, the sports psychologist focusing on children was requested for feedback while prioritising the social-emotional and didactical components of the T-PBCT. The input of the four experts was also assessed to control for face- and content validity.

Analysis

After the focus group was conducted, the results were transcribed first. The structure of the focus group was based on a deductive thematic analysis (Braun & Clarke, 2022). A deductive thematic analysis is a qualitative data analysis in which predetermined themes are systematically analysed. The PCBT, with the fourteen competences that predict performance behaviour (Blijlevens, 2019), was used as a pre-established theory to structure the focus group. As all competences were labelled as a separate theme, the fourteen competences were discussed subsequently. For readability, the word "theme" will be replaced by "competence" in the remaining part of this thesis. The online program Delve (2022) was used for the analysis. Delve is a cloud-based Computer-Assisted Qualitative Data Analysis Software. Within the fourteen competences (themes), all the quotes that were relevant to the competences and all the quotes that were relevant to tennis were coded. After executing this for the fourteen competences, terms that were represented on multiple occasions in multiple competences are coded as "main terms". Other less common terms, often only present within one competence, were coded as "sub-term" to a specific competence.

For the development of the first draft of the T-PBCT, the codes and the PBCT were compared. While paying attention to the feasibility, the questions covering the competences in the PBCT were either being altered, (partly) merged, deleted, or kept the same. After finishing the first draft of the T-PBCT, the feedback of the sports scientist at the RUG and the sports psychologist at the NTC was processed first. Following this, the input of the tennis trainer at the NTC and the sports psychologist focusing on children was processed. After face- and content validity was established, the Reliability testing phase commenced.

Reliability testing phase

Participants

In the Reliability testing phase, trainers/coaches with a C-licence (the highest licence a

tennis trainer/coach in the Netherlands can obtain) who work on a personal basis with a high-performance tennis player filled out the online questionnaire of the T-PBCT twice ($N = 6$). Of the players the T-PBCT was filled out twice; two male players performed at the international level, three players were high-potential players, and one female player performed at the national Dutch level. The trainers/coaches were made aware of the questionnaire by face-to-face contact, personal email and through a promotional piece in a newsletter from the KNLTB directed to this specific group. Participants were motivated to fill out the questionnaire with the incentive that they would receive feedback on the performance behaviour of the tennis player he/she filled the T-PBCT out for. Also, when completing the questionnaire twice, a participant would receive one PO-point.

Procedure

The participants in the Reliability testing phase filled out the T-PBCT through an online questionnaire on the platform Enalyzer (2021). Enalyzer is an online inquiry tool used by the KNLTB. The questions could be answered with a Likert scale from 1 *(totally not present)* to 5 *(strongly present)*. Also, the option "not applicable" was given for each question. This option was added to prevent the participants from guessing and feeling unable to fill out the questionnaire adequately on specific questions.

After two weeks, the participants received feedback on their pupils' performance behaviour. Successively, they were asked to fill out the questionnaire for the second time. For an extra control for feasibility, the participants were presented the opportunity to leave a comment about their answers and/or the questionnaire after each competence and at the end of the questionnaire.

Analysis

As stated earlier, feasibility and face- and content validity were established before the Reliability testing phase commenced. After the participants filled out the questionnaire for the

second time, a test-retest reliability check was conducted by assessing the Pearson correlation coefficient comparing both tests. In addition, internal consistency was controlled by assessing Cronbach's Alpha (α) for each competence. Further, the average time it took the participants to complete the questionnaire was taken. Finally, the participants' remarks were noted and considered regarding the feasibility.

Results

Qualitative Development phase

Focus group

For the deductive thematic analysis in the Qualitative Development phase, the results of the dialogues in the focus group on the fourteen competences (themes) were outlined one by one. The six "main terms" represented on multiple occasions in multiple competences are *match, training, development plan, technique/stroke, tactics* and *with coach.* These six terms are represented throughout the T-PBCT. Table 1 outlines the frequency in which the main terms were mentioned in every competence. Besides the main terms, every competence contains

Table 1

The number of times the main terms were mentioned in every competence (theme).

	Match	**Training**	**Development plan**	**Technique/ stroke**	**Tactics**	**With coach**
Focus	6	2	-	3	-	-
Make decisions and oversee its consequences	2	3	-	1	2	6
Set and achieve goals	3	-	3	-	1	1

Set and protect your boundaries	3	-	-	-	-	1
Make and adhere to your planning	4	1	-	-	-	-
Identify and solve problems	3	-	-	-	-	2
Reflect on your development and performance	5	7	1	2	-	1
Adapt to changing circumstances	2	1	-	-	1	-
Communicate with your environment	4	1	-	1	-	7
Persevere	3	5	1	1	-	-
Create an optimal balance between all activities	1	-	-	-	-	-
Perform under pressure	12	1	-	2	4	1
Work process-oriented	2	1	4	1	1	1
Be self-confident	5	2	-	-	-	1

sub-terms that are represented in a specific competence. Underneath, a short description of the discussion and the sub-terms for every competence is outlined per competence. Sub-terms are determined not only based on prevalence but also on the weight of the sub-term in the dialogue. For illustration, Table B1 (Appendix B) provides one quotation per competence from the focus group.

The ability to focus

"Twenty-five seconds" was the most central point of discussion within this competence. This is because a tennis player needs to be ready for the next point within twenty-five seconds. The participants in the focus group agreed that a player needs to be on the proper concentration level after these twenty-five seconds within a match. Also, the ability to shift from story-thinking to action-thinking within this time was stressed. Another essential part of this competence was a player's ability to be and keep being focused on the learning process of a new technique/stroke.

Sub-terms: *attention curve* (5), *twenty-five seconds* (4).

The ability to make decisions and oversee its consequences

There was consensus among the participants that the extent to which a tennis player involves other people (especially the coach) in their decisions is central to this competence. Also, the decision-making in the composition of a weekly schedule (either for a training week or a tournament week) was deemed important. Lastly, the participants agreed this competence was critical for decision-making during a match. For this, they stressed qualities such as decisiveness and being able to accept consequences.

Sub-terms: *involving others* (5), *weekly schedule* (5), *accepting consequences* (2), *study/school* (2).

The ability to set and achieve goals

According to the focus group, players should be able to track their development closely

and communicate with their team about this. They also need to accept all the help they can get to achieve their goals. Furthermore, players should be able to follow their game plan during a match. They must be able to hold on to their tactics, also in difficult situations.

Sub-terms: *accepting help* (4), *game plan* (2).

The ability to set and protect your boundaries

It was important for the focus group that a player knows how to protect his/her boundaries around matches. Everything should be about the ideal preparation to perform optimally. Also, players need to have their boundaries clear. This is important when a boundary is almost reached so that a player can communicate this in time with his/her team.

Sub-terms: *knowing your boundaries* (5), *communicating your boundaries* (4), *choosing for yourself* (5).

The ability to make and adhere to your planning

The focus of the dialogue within this competence was on the difference between tournament weeks and training weeks. On tournament days and weeks, players must be able to prioritise within the time and means they have. Within training weeks, a player needs to be able to think about planning elaborately and act on his/her planning efficiently.

Sub-terms: *gameday* (5), *week planning* (5).

The ability to identify and solve problems

Different kinds of problem-solving were discussed. One was the ability to solve the problem of an opponent who plays well. In this situation, a player must be capable enough to always take an active approach and not give up. Another kind of problem-solving discussed was that players should make problems discussable with their team. They should not be afraid to bring problems up, difficult or not.

Sub-terms: *active attitude* (5), *negotiable* (3), *opponent* (2).

The ability to reflect on your development and performance

For the focus group participants, reflecting during matches and training (both seen as significantly different) was important. Also, reflecting on superordinate matters like goals for the future or minor matters like the efficiency of specific strokes was deemed valuable.

Sub-terms: *micro/macro level* (4), *acting after ascertaining* (4), *external factors* (1).

The ability to adapt to changing circumstances

The main conclusion was that players are good at adapting when they can differentiate between when to adjust and when not to adjust. Besides this, it is not wrong when a player is affected by a situation if he/she can shift back in time. Specific to tennis, players need to be able to adapt to circumstances like windy/bad weather, tennis balls, spectators, and opponents playing differently (than expected).

Sub-terms: *recognising when (not) to change* (6), *shifting back* (5).

The ability to communicate with your environment

The participants determined that communication is most productive when a player communicates effectively, proactively, and openly. By doing so, assumptions in communication can be avoided. It is also important that players know which person can support them the best at which moment and that they take responsibility for initiating contact when needed.

Sub-terms: *taking responsibility* (8), *being proactive* (6), *avoiding assumptions* (3).

The ability to persevere

It was important for the focus group that players can be and can keep being focused on their tasks no matter what. Players must be task-oriented despite setbacks in score, strong opponents, bad weather, external factors, etc. This is the case for both match- and training scenarios. Also, players must always keep their development plan in mind, especially at difficult times, like when a player is injured. The constant urge to keep developing, no matter

the situation, was essential for the focus group.

Sub-term: *focusing on task* (3).

The ability to create an optimal balance between all activities

For the participants, players must be capable of resting at the right moments and being fresh for optimal performance at the right moments. The 80% (tennis) – 20% (private) scale was agreed upon as the right proportion. To be and keep in balance on this competence, a certain amount of self-knowledge is needed.

Sub-terms: *being well-rested* (4), *self-knowledge* (3), *optimal balance* (2).

The ability to perform under pressure

For this competence, sticking to the plan was central for the participants. Performing under pressure did not necessarily mean winning matches. It means consistently committing to your game plan and stroking the ball with the right amount of relaxation when the pressure is high. Also, the "twenty-five seconds" were deemed important for this competence. Players need to be able to be ready for the next point and put their own and other people's expectations next to them before the point starts. When doing this sufficiently, players should be able to perform according to their potential, also in the more tense moments.

Sub-terms: *acting on task* (11), *expectations* (6).

The ability to work process-oriented

Within this competence, the composition of- and working according to a development plan was a central subject for the focus group. Involving people in this process was considered advantageous. Understanding that processes like matches and training take time was another talking point. According to the participants, players need to be patient, communicate about the progress of their process, and understand what the ability to work process-oriented is.

Sub-terms: *patience* (5), *communicating about the process* (5).

The ability to be self-confident

According to the participants, a player also must be able to hold on to his/her routine, game plan, and goals when he/she is less confident at that moment in time. Also, confidence should be based on more than the winning or losing of matches. The participants stressed that they often perceive the repercussion of losing a match, as well as diminished results at school, on their player's confidence on the court. There was consensus in the focus group that players need to be able to gain confidence from their performance instead of their results.

Sub-terms: *consistency in behaviour* 6), *focusing on process* (4).

Expert evaluation

After the construction of the first draft of the T-PBCT, the sports scientist at the RUG and the sports psychologist at the NTC provided feedback on the following aspects: the preservation of the construction of the levels of mastery within each competence, the distinctiveness of questions, choice of words, the differences between the PBCT and the T-PBCT, the readability and the feasibility. In the second round of feedback, the tennis trainer at the NTC and the sports psychologist focusing on children provided input on the following aspects: explanation of the T-PBCT towards coaches and feasibility. With these two rounds of feedback, face- and content validity was presumed as established. After implementing this first round of feedback, the T-PBCT made more significant alterations and improvements when compared to the implementation of the second round of feedback. Integrating the experts' feedback resulted in the final version of the T-PBCT (Appendix A).

Reliability testing phase

After the above, the Qualitative Development phase was finished. The T-PBCT consists of 130 questions, whereas the PBCT consists of 154. 23 questions were added, 47 were deleted, and 78 were altered in content. Questions that are purely altered regarding feasibility (e.g., choice of words for readability, inclusiveness for both genders and the word "tennis" instead

of the word “sports”) are not included in the number of altered questions.

Table 2 includes each competence's mean, standard deviation, internal consistency, and test-retest reliability score on both tests (T1 and T2). In the check for reliability, only the competences *Make and adhere to your planning* (r = .96) and *Be self-confident* (r = .95)

Table 2

Means, standard deviation, internal consistency, and the Pearson correlation test-retest reliability of the fourteen competences (N = 6).

Competence	**M(T1)**	**SD(T1)**	**α (T1)**	**M(T2)**	**SD(T2)**	**α (T2)**	***r*(T1-T2)**
Focus	3.78	.86	.87	3.63	.77	.85	.54
Make decisions and oversee its consequences	3.76	.78	.81	3.63	.71	.78	-.16
Set and achieve goals	4.06	.62	.81	3.79	.67	.33	.08
Set and protect your boundaries	3.33	.92	.87	3.33	.66	.71	.48
Make and adhere to your planning	4.21	.83	.88	4.04	.66	.61	.96*
Identify and solve problems	3.29	.72	.87	3.33	.61	.52	-.09
Reflect on your development and performance	3.59	.70	.60	3.41	.62	.20	.58

Adapt to changing circumstances	3.54	.70	.72	3.33	.65	.83	.54
Communicate with your environment	3.65	.76	.82	3.55	.75	.72	-.10
Persevere	4.17	.74	.75	3.88	.72	.87	.55
Create an optimal balance between all activities	4.26	.64	.16	4.15	.64	.18	.31
Perform under pressure	3.52	.77	.92	3.38	.75	.93	.78
Work process-oriented	3.96	.94	.27	3.98	.78	.55	-.03
Be self-confident	3.79	.87	.76	3.44	.70	.93	.95*

Note. * $p < .01$ (two-tailed).

showed a significant test-retest reliability score. The statistical analyses lacked power since only six participants participated in the Reliability testing phase. All participants who completed the first (T1) questionnaire completed the second (T2) questionnaire. Twenty-five participants did not finish the questionnaire. Whereas fourteen participants did not finish the questions on the first competence, eleven did not proceed after finishing the questions on the first competence. The analyses did not include unfinished questionnaires.

When controlling for internal consistency on T1, all competences, besides the competences *Reflect on your development and performance* ($\alpha = .60$), *Create an optimal balance between activities (*$\alpha = .16$), and *Work process-oriented* ($\alpha = .27$), scored within the range ($.95 \geq \alpha \geq .70$). A score within this range is generally considered for good internal

consistency (Nunnally, 1978). Where eleven of the fourteen competences showed good internal consistency in T1, only eight of the fourteen competences did so in T2. The six competences not showing signs of good internal consistency were: *Set and achieve goals* (α = .33), *Make and adhere to your planning* (α = .61), *Identify and solve problems* (α = .52), *Reflect on your development and performance* (α = .20), *Create an optimal balance between all activities* (α = .18), *Work process-oriented* (α = .55). Eight of the fourteen competences showed good internal consistency on both tests (*Focus, Make decisions and oversee its consequences, Set and protect your boundaries, Adapt to changing circumstances, Communicate with your environment, Persevere, Perform under pressure* and *Be self-confident).* This means that only the competence *Be self-confident* shows a significant reliability score on both the test-retest reliability and the internal consistency checks.

The average age of the tennis players for whom the T-PBCT was filled out was 17.5 (range: 12-23). On average, it took participants 19.5 minutes to complete the T-PBCT. Figure 2 outlines the most relevant remarks on the T-PBCT.

Figure 2

General remarks:
'A long but comprehensive questionnaire.'
'After filling out the questionnaire twice, I feel that I need to get to know my player better. I would like to be able to answer the questions merely based on the conversation with my player, instead of my observations.'
'Difficult to really give an impression of how the player functions, to provide a clear image.'
Competence-specific remarks:
On the competence *the ability to reflect on your development and performance*:

‘Communication is the competence that hinders my player on this competence.’
On the ability to create an optimal balance between all activities: ‘It would be very helpful to be able to give percentages in the private/professional distribution of the players. This since I can think of players that do not have a private life and only focus on tennis, and I can also think of players having a difficult time resisting the temptations in their private life.’
On the ability to make decisions and oversee its consequences: ‘Something I miss is the specificity in the type of decisions; behaviour, tactical, line-calls.’

Discussion

The current study developed a tennis-specific performance behaviour coaching tool (T-PBCT). The PBCT (Blijlevens, 2019), including the fourteen competences assessing performance behaviour, is taken as the scientific framework within this study. In aiming to develop the T-PBCT, tennis experts’ vision and knowledge of the fourteen competences in the context of tennis were assessed in a focus group. A deductive thematic analysis was used for analysis. The main terms represented in most competences were: “Match” (all competences), “Training” (11 out of 14 competences), and “With coach” (9 out of 14 competences). Also, for all competences, distinguishing sub-terms were identified. Following the interpretation of the data, an extensively altered, tennis-specific draft version of the T-PBCT, in which components for all competences were altered/added/deleted, was derived. Subsequently, various experts’ feedback on the draft was assessed, with which feasibility and validity were assured. The last step in developing the T-PBCT was a reliability study, which lacked power. This being noted, the reliability of the T-PBCT cannot be assured.

Strengths and limitations

The basis of the T-PBCT is identical to the PBCT. The T-PBCT assesses performance

behaviour throughout the same fourteen competences as implemented in the PBCT. The three levels of mastery (the same as incorporated in the HAC-model) are also included in the T-PBCT. The main difference between the PBCT and the T-PBCT is the specificity of this coaching tool in tennis. Since performance behaviour is assessed by how an athlete deals with the challenges/demands in his/her athletic career (NOC*NSF TeamNL, 2020a), assessing these challenges/demands in a tennis context is likely to add value. A question like *"anticipates on a good playing opponent throughout an active change in his/her game when this is needed during the match"* (translated from Dutch) on the competence *Identify and solve problems* illustrates this well. Some questions in the T-PBCT are less definitely directed at tennis but are increasing the individual sports-specificity of the T-PBCT. *"Makes sure that both the player and the coach know what to expect from each other"* (translated from Dutch) is an example of such a question.

Like the PBCT, the T-PBCT is a distinctive tool compared to most tools that assess psychological skills/competences for athletes. This is because, in sports, self-reporting questionnaires are the most frequently used tools to evaluate information about an athlete's behaviour by inquiring about underlying psychological processes (Meredith et al., 2018). In self-reporting questionnaires, the emphasis is not on actual behaviour but on the athlete's underlying cognitive processes and perception and understanding of his/her behaviour (Blijlevens, 2018). In the case of high-potential and elite athletes, coaches extensively work with their pupils in multiple contexts (competition, training, social life). For this reason, coaches assemble much knowledge and information about their athletes over time (Blijlevens, 2018). Like the PBCT, the T-PBCT allows coaches to combine knowledge and observation of their athletes in a clear and insightful performance behaviour context. Also, just like the PBCT, the T-PBCT included the option to add remarks. Adding this option accommodates the assessment and evaluation process since coaches are stimulated to share their motivation

behind the assessment with their players when there is space for remarks (Holder et al., 2018).

Compared to the PBCT, the T-PBCT is more action-based and adds context specificity in tennis. Action-based and context specificity being two of the four elements of competences in sports (Bezanilla et al., 2014, p. 43), the T-PBCT certainly adds practical value for high-performance tennis coaches. Newly developed questions on the competence *Perform under pressure* illustrate this well. As stated earlier, a player who performs under pressure could clutch and choke (Otten, 2009). Questions like *"Keeps playing effectively when he/she experiences stress (e.g. keeps going for the return)"* and *"Has nerves and stress under control before the next point begins"* (translated from Dutch) break aspects that determine a tennis player his/her level on this competence apart. This creates an accurate image of not only how a player scores on this competence but also why a player scores as he/she scores on this competence. Information like this can help tennis coaches develop specific training exercises to support a player's/development more accurately. Also, adding tennis-specificity makes the T-PBCT accessible for frequent use when coaches decide to train their players on aspects of tennis incorporated within specific competences.

Another advantage of the tennis-specificity of the T-PBCT is that it enables coaches to provide a better assessment. Coaches are expected to have enough knowledge of four elements of performance (the physical, psychological, technical, and tactical components) (Elferink-Gemser et al., 2018). Since technical and tactical tennis-related elements are added to several competences, the significance of these elements in the T-PBCT increases. This supports the realism and the authenticity of the behaviour that is to be observed, which is helpful for the accuracy of observations (Ledoux et al., 2013).

A strength in the current study's design is that the experts who gave feedback on the draft of the T-PBCT have different expertise. Whereas two sports scientists provided feedback first, two experts in different domains (a high-performance tennis trainer and a sports psychologist

focusing on children) provided feedback second. This increases the distinctiveness of angles from which the T-PBCT has been evaluated, accommodating the feasibility and validity of the coaching tool.

Certain remarks should be noted along with the current study, starting with the participants in the focus group in the Qualitative Development phase. Although all four participants fit well in the study context, several remarks regarding the group composition can be illustrated. First, all four participants work together or alongside each other at the NTC. This could have constricted the knowledge and attitudes present in the focus group. Also, the participants might have felt less free to share their thoughts due to the mutual connections. Second, two of the four participants personally knew the researcher conducting the focus group, which implicitly could have led to a bias towards the study. Lastly, one participant was aware of the existence of the research question of the current study in advance of the focus group. This could have influenced the preparation and the attitude of the participant beforehand.

After the expert evaluation in the Qualitative Development phase established the T-PBCT as feasible and valid, the Reliability testing phase did not establish the T-PCBT as reliable. Only two of the fourteen competences showed a significant score on reliability with the test-retest reliability check. When addressing reliability, the lack of power due to a sample size of $N = 6$, which makes it difficult to find significant results, must be noted. Most competences (eight out of fourteen) scored better on the measurement of internal consistency, for which sample size (a significant limitation of the current study) has no considerable effect, but the number of items (in the T-PBCT on average more than nine per competence) does (Ercan et al., 2007). This indicates that more than half of the competences show a consistent pattern when tennis trainers/coaches fill out the T-PBCT. However, again, the accuracy of a measurement for internal consistency with a sample size of $N = 6$ must be noted.

The fact that participants received feedback on the performance behaviour of the tennis

players for whom they filled out the T-PBCT must be mentioned as a limitation of the current study. This attempt to make participation more appealing caused the participants to receive information on their players' performance behaviour between the first and the second time of filling out the T-PBCT. For this reason, the participants were likely biased when they filled out the T-PBCT for the second time.

A lack of power majorly compromises the current study. This, although the whole population of candidates filling out the questionnaire (trainers/coaches with a C-licence in the Netherlands), was successfully reached through an invitational piece in a monthly KNLTB newsletter. Also, multiple attempts were made to make participation attractive. An explanation could be that the questionnaire was too long and tedious for participants to complete twice. However, when inspecting unfinished questionnaires, most participants did not proceed further than the questions on the first competence. This indicates that participants did not want to complete the questionnaire after being confronted with the first part. In hindsight, mirroring the approach of Blijlevens (2019) by only completing validity and reliability checks for six of the fourteen competences could have been the better approach for the current study. Shortening the questionnaire for the Reliability testing phase would perhaps have implicated a reliable T-PBCT. This implication is not possible at this moment.

Future research and implications

The current study decided to develop a T-PBCT containing all the fourteen competences of the PBCT. This decision was made while considering that one competence could be more relevant for tennis players than another. The argument the current study alleges is that the fourteen competences combined resemble performance behaviour, and performance behaviour is needed for tennis players to reach the top. Also, the current research decided to take the PBCT as the scientific framework and, therefore, not alter the PBCT’s foundation (competences, levels of mastery). Following up on this, Table 1 shows signs of a difference in

the importance of the competences in a tennis-specific context since the prevalence of main terms is not well balanced between competences. An alternate explanation for the difference in this prevalence could be the idiosyncrasy of the speakers in the focus group. Also, specific competences could cover main terms implicitly, resulting in main terms being mentioned less. To keep improving on feasibility and tennis-specificity, future research is recommended to determine whether all the fourteen competences are relevant (enough) for the T-PBCT.

As the first competence-specific remark in Figure 2 sketches, overlap within (the questions on) the competences *Reflect on your development and performance* and *Communicate with your environment* could be present in the T-PBCT. This is analogous with participants' remarks on the PBCT (Blijlevens, 2019), in which participants stated: *"several behavioural indicators were duplicate".* In previous research on the levels of mastery within the PBCT, De Bruin (2022) found an overlap between the competences *Work process-oriented* and *Create an optimal balance between all activities* and the competences *Reflect on your development and performance and Be self-confident.* The current study did not focus on the overlap of (tennis-specific) competences whilst developing the T-PBCT. The T-PBCT is less extensive than the PBCT but would still be accommodated by being less extensive. It would contribute to the length and, thereby, the feasibility of the T-PBCT when specific competences could be incorporated into one. Future research is advised to address this alleged overlap in the fourteen competences of the (T-)PBCT to optimise the measurement of performance behaviour. When future research carries out this research, it is crucial to avoid giving in on construct validity since a shorter (T)-PBCT is not necessarily more helpful when it measures less well than what it is supposed to measure.

Future research is also recommended to assess the confidence of sports coaches working with a sports-specific coaching tool (like the T-PBCT) compared to a generic coaching tool (like the PBCT). Gould et al. (1999) found that tennis trainers/coaches lack confidence in

working with assessment tools in which mental skills are central. One can imagine that the increase in the significance of tennis-specific technical and tactical components in the T-PBCT benefits tennis coaches' confidence in working with it. This is because the weight increases on elements of performance behaviour within the tennis coach's expertise. A coach's increased confidence in working with an assessment tool like the T-PBCT would probably increase the willingness to use the tool. The latter is one of the implicit objectives of the development of the T-PBCT.

Furthermore, future research is encouraged to research whether increased use of the T-PBCT by the coach (which the addition of tennis-specificity accommodates) could improve the mutual comprehension between coach and player. The reason for this suggestion is the concept of shared mental models, defined as: "knowledge structures held by members of a team that enable them to form accurate explanations and expectations for the task, and, in turn, to coordinate their actions and adapt their behaviour to demands of the task and other team members" (Cannon-Bowers et al., 1993). Shared mental models are presumed to accommodate performance (Raue et al., 2021) and are mainly researched in the context of team sports. Whereas tennis is not a team sport, a tennis player and coach can be considered a team in the high-performance context for which the T-PBCT is constructed. One can imagine the positive effects an increase in shared mental models between player and coach could have when both are actively involved in working according to the T-PBCT.

Conclusion

The current study developed a tennis-specific performance behaviour coaching tool. The construction of the fourteen competences that measure performance behaviour in the PBCT (Blijlevens, 2019) are altered in a more action-based and context-specific manner. This resulted in a more accessible and accurate coaching tool in a high-performance tennis context. Whereas the Qualitative Development phase of the current study resulted in a feasible and

valid T-PBCT, the statistical checks for reliability lacked the power to ascertain a reliable coaching tool. Future research is encouraged to control for the reliability of the T-PBCT properly, explore whether all fourteen competences are relevant enough in this context, and investigate the potential benefits of the added action-based and context-specific components of the T-PBCT. Expanding the scientific knowledge and application of sports-specificity in coaching tools is crucial to keep up with the rapidly developing world of high-performance sports. The current research made a small but tangible step in this development.

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Appendix A

The Tennis-specific Performance Behaviour Coaching Tool (T-PBCT).

Aandacht richten						
Definitie: De tennisser is in staat om zijn/haar aandacht te richten op een situatie of taak, ondanks afleiding, gedachten, vermoeidheid of verveling.						
Situaties waarin het gedrag is waar te nemen: • Tijdens het aanleren van nieuwe oefeningen • Tijdens wedstrijden met externe factoren zoals publiek • Tussen de punten door						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Toont inzet en energie om aandachting te trainen	☐	☐	☐	☐	☐	
Zet zichzelf tijdens een wedstrijd ertoe om ieder punt gefocust te beginnen, ook als het even niet lukt of onder moeilijke omstandigheden	☐	☐	☐	☐	☐	
Past technieken (focus op ademhaling, extra tijd nemen) toe om de aandacht op de taak te richten na afleidingen, tegenslagen of vermoeidheid	☐	☐	☐	☐	☐	
Visualiseert de taak/oefening om zijn/haar aandacht te richten	☐	☐	☐	☐	☐	
Kan zich langdurig concentreren op een specifieke oefening (bijvoorbeeld aanpassing in voetenstand, andere manier van slaan, etc)	☐	☐	☐	☐	☐	
Slaagt erin om binnen 25 seconden geconcentreerd aan het volgende punt te beginnen	☐	☐	☐	☐	☐	
Heeft op de baan controle over waar hij/zij zijn/haar aandacht op richt	☐	☐	☐	☐	☐	
Weet wat hem/haar tijdens een wedstrijd kan afleiden en weet hiermee om te gaan	☐	☐	☐	☐	☐	
Kan afhankelijk van zijn/haar taak op dat moment zijn/haar aandacht richten op kleine details of het grotere geheel	☐	☐	☐	☐	☐	

Aanpassingsvermogen						
Definitie: De tennisser is in staat om zijn/haar gedrag aan te passen aan veranderende omstandigheden, taken, verantwoordelijkheden en personen.						
Situaties waarin het gedrag is waar te nemen: • Bij onverwachtse gebeurtenissen en situaties • Bij nieuwe situaties (bijv. andere werkwijze, omgeving) • Bij tegenslagen						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Blijft energiek en gedreven na een tegenslag of moeilijke situatie op de baan	☐	☐	☐	☐	☐	
Toont zich flexibel als hij/zij wordt geconfronteerd met een uitdagende situatie naast de baan	☐	☐	☐	☐	☐	
Blijft ondanks veranderende/moeilijke omstandigheden taakgericht	☐	☐	☐	☐	☐	
Kan zijn/haar spelplan aanpassen wanneer dit nodig is (anders spelende tegenstander, weersomstandigheden, etc)	☐	☐	☐	☐	☐	
Kan zich na afleiding/tegenslag weer op tijd opnieuw voor het volgende punt concentreren	☐	☐	☐	☐	☐	
Brengt mogelijke toekomstige uitdagingen in kaart om hier tijdens de wedstrijd op voorbereid te zijn	☐	☐	☐	☐	☐	
Kan makkelijk schakelen naar andere en nieuwe werkwijzen als de coach daarom vraagt	☐	☐	☐	☐	☐	
Kan de afweging maken wanneer hij/zij wel, en wanneer hij/zij niet het spelplan moet aanpassen. Koppelt het wel of niet aanpassen, niet enkel aan de tussenstand	☐	☐	☐	☐	☐	

Beslissingen nemen						
Definitie: De tennisser is in staat om beslissingen te nemen en de consequenties ervan te accepteren.						
Situaties waarin het gedrag is waar te nemen: • Wanneer de speler grote beslissingen dient te nemen (bijv. nieuwe coach, studie) • Wanneer de speler zich moet verantwoorden voor zijn/haar keuzes • Beslissingen onder tijdsdruk						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Hanteert een systematische aanpak om tot keuzes in tennis/privé/school activiteiten te komen	☐	☐	☐	☐	☐	
Toont zekerheid bij het nemen van een beslissing	☐	☐	☐	☐	☐	
Schakelt (indien dit van toegevoegde waarde is) hulp in van anderen (coach, staf, ouders) bij het maken van beslissingen	☐	☐	☐	☐	☐	
Houdt rekening met verschillende belangen bij het maken van een indeling in tennis/privé	☐	☐	☐	☐	☐	
Maakt de juiste beslissingen in veel voorkomende wedstrijdsituaties	☐	☐	☐	☐	☐	
Kan een beslissing voor alle betrokken partijen verantwoorden	☐	☐	☐	☐	☐	
Accepteert de consequenties van zelf genomen beslissingen	☐	☐	☐	☐	☐	
Maakt de juiste beslissingen in een unieke, spannende wedstrijdsituatie	☐	☐	☐	☐	☐	
Krijgt betrokkenen mee door naast de baan openhartig, overtuigend en doeltreffend te beslissen	☐	☐	☐	☐	☐	

Communiceren						
Definitie: De tennisser is in staat om doeltreffend te communiceren en zijn/haar communicatie af te stemmen op zijn/haar omgeving.						
Situaties waarin het gedrag is waar te nemen: • Bij het ontvangen van feedback • Tijdens meningsverschillen • Bij dagelijkse gesprekken						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Luistert aandachtig naar anderen	☐	☐	☐	☐	☐	
Zorgt ervoor dat hij/zij informatie goed begrijpt	☐	☐	☐	☐	☐	
Communiceert op begrijpelijke wijze	☐	☐	☐	☐	☐	
Uit hoe hij/zij zich voelt en wanneer hij/zij hulp nodig heeft	☐	☐	☐	☐	☐	
Zijn/haar lichaamstaal en verbale communicatie komen overeen	☐	☐	☐	☐	☐	
Toont begrip voor andermans mening, ook als deze niet aansluit bij zijn/haar mening	☐	☐	☐	☐	☐	
Zorgt ervoor dat zowel de speler als de coach weten wat ze van elkaar verwachten	☐	☐	☐	☐	☐	
Schiet bij het ontvangen van feedback niet in de verdediging	☐	☐	☐	☐	☐	
Communiceert effectief: is proactief, open, past zijn/haar communicatie aan op de persoon en voorkomt aannames	☐	☐	☐	☐	☐	
Maakt moeilijke, complexe situaties bespreekbaar	☐	☐	☐	☐	☐	
Heeft een doel voor ogen en zet goede communicatie in als middel om dit te bereiken	☐	☐	☐	☐	☐	

Doelgericht handelen						
Definitie: De tennisser is in staat om zijn/haar eigen doelen te bereiken door middel van een goede verdeling van zijn/haar tijd, inzet en middelen.						
Situaties waarin het gedrag is waar te nemen: • Bij het opstellen van doelen • Wanneer een doel niet gehaald wordt • In het volgen van het ontwikkelingsplan						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Heeft een duidelijk einddoel voor ogen	☐	☐	☐	☐	☐	
Is enthousiast en gedreven om gestelde tussendoelen van het ontwikkelingsplan te halen	☐	☐	☐	☐	☐	
Heeft verschillende soorten doelen: windoelen, verbeterdoelen en procesdoelen	☐	☐	☐	☐	☐	
Volgt zijn/haar ontwikkelingsplan doelgericht, monitort de voortgang en communiceert hierover met zijn/haar coach	☐	☐	☐	☐	☐	
Kan zijn/haar vooraf opgestelde spelplan tijdens een wedstrijd blijven volhouden	☐	☐	☐	☐	☐	
Maakt goed gebruik van zijn/haar eigen capaciteiten en middelen om doelstellingen te halen	☐	☐	☐	☐	☐	
Kan doelen aanpassen wanneer dit nodig is	☐	☐	☐	☐	☐	
Kan analyseren waarom gestelde doelen wel/niet gehaald zijn	☐	☐	☐	☐	☐	

Doorzettingsvermogen						
Definitie: De tennisser is in staat om, ook bij moeilijkheden, door te zetten en uitdagingen aan te pakken.						
Situaties waarin het gedrag is waar te nemen: • Bij fysiek en mentaal zware taken • Bij het herstellen van een blessure • Bij moeilijke momenten tijdens een wedstrijd						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Blijft tijdens een training/oefening doorgaan, ook wanneer het niet lukt of tegenzit	☐	☐	☐	☐	☐	
Blijft tijdens een wedstrijd doorgaan, ook wanneer het niet lukt of tegenzit	☐	☐	☐	☐	☐	
Pept zichzelf op wanneer dit nodig is	☐	☐	☐	☐	☐	
Pakt taken en handelingen buiten de baan direct wanneer het kan aan	☐	☐	☐	☐	☐	
Probeert het eerst zelf en vraagt om hulp wanneer iets niet lukt	☐	☐	☐	☐	☐	
Zoekt niet naar excuses om een zware training/oefening te beginnen of volbrengen	☐	☐	☐	☐	☐	
Blijft taakgericht en blijft doorgaan ondanks verveling of vermoeidheid	☐	☐	☐	☐	☐	
Wil hard voor zijn/haar taak werken om deze te laten slagen	☐	☐	☐	☐	☐	
Blijft rustig bij tegenslag (blessure, niet behalen van korte termijn doel, etc), bepaalt een nieuwe strategie en voert deze uit met het doel om beter te worden	☐	☐	☐	☐	☐	
Vraagt de coach om gerichte feedback die kan helpen om door te zetten om opgestelde doelen te bereiken	☐	☐	☐	☐	☐	

Grenzen stellen & bewaken						
Definitie: De tennisser is in staat om zijn/haar eigen grenzen te herkennen en deze proactief te bewaken.						
Situaties waarin het gedrag is waar te nemen: • Bij oververmoeidheid/pijn • Wanneer er vanuit meerdere partijen veel wordt gevraagd • Tijdens het herstellen van een blessure						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Weet en kan uitdrukken hoe hij/zij zich fysiek voelt	☐	☐	☐	☐	☐	
Weet en kan uitdrukken hoe hij/zij zich mentaal voelt	☐	☐	☐	☐	☐	
Gaat niet over zijn/haar fysieke en mentale grens heen	☐	☐	☐	☐	☐	
Geeft tijdig aan wanneer er te veel van hem/haar gevraagd wordt	☐	☐	☐	☐	☐	
Vraagt om hulp bij pijn en/of oververmoeidheid	☐	☐	☐	☐	☐	
Neemt verantwoordelijkheid in het bewaken van zijn/haar grenzen	☐	☐	☐	☐	☐	
Kiest op een wedstrijddag ten alle tijden voor zichzelf (Bijvoorbeeld: speelt in op zijn/haar tijd, zondert zich af wanneer nodig, etc.)	☐	☐	☐	☐	☐	

Optimale balans & persoonlijke leefstijl						
Definitie: De tennisser is in staat om tennis en overige activiteiten te balanceren en hanteert een leefstijl die bijdraagt aan zijn/haar sportieve ontwikkeling en prestaties.						
Situaties waarin het gedrag is waar te nemen: • Wanneer de aandacht verdeeld moet worden • Bij verblijf in het buitenland • Wanneer tennis om offers vraagt						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Gaat flexibel om met de vereisten van het zijn van een (jonge) toptennisser	☐	☐	☐	☐	☐	
Hanteert een leefstijl die aansluit bij het leven van een (jonge) talentvolle toptennisser	☐	☐	☐	☐	☐	
Zorgt voor een goede balans tussen tennis en andere dagelijkse activiteiten. Tennis-privé verdeling komt overeen met de fase van zijn/haar carrière op dit moment	☐	☐	☐	☐	☐	
Verzorgt zichzelf mentaal goed	☐	☐	☐	☐	☐	
Verzorgt zichzelf lichamelijk/fysiek goed (bijv. passend slaap- en voedingspatroon)	☐	☐	☐	☐	☐	
Kan de discipline die voor de uitvoering van een effectief trainings- en voedingsschema nodig is opbrengen	☐	☐	☐	☐	☐	
Maakt zelfstandige keuzes en schakelt zijn/haar coach in waar nodig	☐	☐	☐	☐	☐	
Zorgt voor de meest optimale setting om te kunnen ontwikkelen en presteren	☐	☐	☐	☐	☐	
Gebruikt zijn/haar zelfkennis voor het onderhouden van een gezonde balans tussen toptennis en privé. Weet wat hij/zij nodig heeft	☐	☐	☐	☐	☐	

Plannen						
Definitie: De tennisser is in staat om een plan van aanpak te maken om een doel te bereiken en deze planning na te leven.						
Situaties waarin het gedrag is waar te nemen: • Tijdens een trainingsweek • Tijdens een toernooiweek • Wanneer een plan verschillende fases bevat						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Heeft een planning op de wedstrijddag. Stelt zelf prioriteiten binnen de beschikbare tijd en middelen. Houdt rekening met slaap, voeding, inspelen etc.	☐	☐	☐	☐	☐	
Heeft een passende weekplanning tijdens een toernooiweek	☐	☐	☐	☐	☐	
Heeft een passende weekplanning tijdens een trainingsweek	☐	☐	☐	☐	☐	
Maakt een planning met het gewenste eindresultaat in gedachten	☐	☐	☐	☐	☐	
Neemt de uitwerking van voorgaande plannen mee in het maken van nieuwe plannen	☐	☐	☐	☐	☐	
Bepaalt vooraf de verschillende fasen van een plan en wie hij/zij daar eventueel voor nodig heeft	☐	☐	☐	☐	☐	
Kan op basis van eigen kennis en ervaring een planning effectief aanpassen indien nodig	☐	☐	☐	☐	☐	
Evalueert tussentijds op zijn/haar ontwikkelingsplan om eventueel bij te sturen	☐	☐	☐	☐	☐	

Presteren onder druk						
Definitie: De tennisser is in staat om te presteren onder druk door zijn/haar spanningsniveau te reguleren.						
Situaties waarin het gedrag is waar te nemen: • In stressvolle situaties • Bij hoge verwachtingen • Tijdens belangrijke wedstrijden						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Blijft functioneren bij stress of zenuwen	☐	☐	☐	☐	☐	
Herkent wat stress met zijn/haar lichaam en gedachten doet	☐	☐	☐	☐	☐	
Herkent tijdens de wedstrijd factoren die stress oproepen en weet hoe dit zijn/haar spel beïnvloedt	☐	☐	☐	☐	☐	
Oefent controle uit over zijn/haar gedachten in stressvolle situaties	☐	☐	☐	☐	☐	
Blijft effectief spelen wanneer hij/zij stress ervaart (bijv. blijft de return doorslaan)	☐	☐	☐	☐	☐	
Weet wat stress voor zijn/haar spel kan veroorzaken en anticipeert hierop door zo goed mogelijk om te gaan met factoren die stress veroorzaken	☐	☐	☐	☐	☐	
Kan omgaan met verwachtingen	☐	☐	☐	☐	☐	
Heeft zenuwen en stress onder controle voordat het volgende punt begint	☐	☐	☐	☐	☐	
Blijft met kwaliteit slaan en bewegen op spannende momenten	☐	☐	☐	☐	☐	
Is vastberaden om ook onder stress te presteren	☐	☐	☐	☐	☐	

Probleemoplossend vermogen						
Definitie: De tennisser is in staat problemen te identificeren en tot de best passende oplossingen te komen voor een probleem.						
Situaties waarin het gedrag is waar te nemen: • Wanneer er verschillende oplossingen voor een probleem zijn • Wanneer een tegenstander beter speelt dan verwacht • Wanneer er in de toekomst problemen verwacht kunnen worden						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Brengt een probleem helder voor zichzelf in kaart	☐	☐	☐	☐	☐	
Denkt goed na over de verschillende oplossingen voor een probleem en de bijbehorende voor- en nadelen	☐	☐	☐	☐	☐	
Kan een probleem analyseren en deelt de oplossing in duidelijke, logische, behapbare delen op	☐	☐	☐	☐	☐	
Maakt tijdens de wedstrijd, ook bij tegenslag, goede en logische keuzes	☐	☐	☐	☐	☐	
Anticipeert op een goed spelende tegenstander door actieve verandering in spel wanneer dit nodig is tijdens de wedstrijd	☐	☐	☐	☐	☐	
Is problemen voor door proactief te zijn	☐	☐	☐	☐	☐	
Maakt (toekomstige) problemen bespreekbaar en is niet bang om moeilijkheden aan te kaarten	☐	☐	☐	☐	☐	
Zorgt voor draagvlak voor zijn/haar beslissingen	☐	☐	☐	☐	☐	

Procesgericht werken						
Definitie: De tennisser is in staat om te bepalen hoe hij/zij doelstellingen wil bereiken en hierin stapsgewijs en geduldig naartoe te werken.						
Situaties waarin het gedrag is waar te nemen: • Wanneer de speler uitlegt wat wat en waarom hij/zij iets doet • Wanneer de speler over het ontwikkelingsplan nadenkt • Bij het aanleren van nieuwe technische of tactische vaardigheden						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Kan uitleggen wat hij/zij doet	☐	☐	☐	☐	☐	
Kan uitleggen waarom hij/zij iets doet	☐	☐	☐	☐	☐	
Weet wat er verwacht wordt en heeft daarbij het proces voor ogen (werkt adhv een ontwikkelingsplan)	☐	☐	☐	☐	☐	
Is geduldig en neemt genoegen met kleine stappen adhv een ontwikkelingsplan	☐	☐	☐	☐	☐	
Bepaalt concrete acties en stappen voor een doel en is actief bezig met zijn/haar ontwikkelingsplan	☐	☐	☐	☐	☐	
Heeft overzicht in zijn/haar ontwikkelproces	☐	☐	☐	☐	☐	
Heeft aandacht voor wat op dat moment belangrijk is	☐	☐	☐	☐	☐	
Speelt wedstrijden punt voor punt	☐	☐	☐	☐	☐	
Is geduldig bij het aanleren van nieuwe technische of tactische vaardigheden	☐	☐	☐	☐	☐	
Staat open voor (nieuwe) input van anderen in het proces en kan hierover communiceren	☐	☐	☐	☐	☐	
Heeft een eigen aanpak om tot een plan te komen en deelt dit met betrokkenen	☐	☐	☐	☐	☐	

Reflecterend vermogen						
Definitie: De tennisser is in staat om te reflecteren op zijn/haar gedachten of gedrag met als doel er iets uit te leren voor verbetering in de toekomst.						
Situaties waarin het gedrag is waar te nemen: • Bij het bepalen van verbeterpunten • Bij het toelichten van bepaalde misvattingen in zijn/haar gedrag of denkwijze • Bij het benoemen van goede/zwakke eigenschappen						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Kan zijn/haar denkproces onder woorden brengen	☐	☐	☐	☐	☐	
Kan zowel op kleine doelen (bijv. een slag) als grotere doelen (bijv. vooruitgang van de laatste maanden) reflecteren	☐	☐	☐	☐	☐	
Kan tijdens een reflectie toelichten waar misvattingen in zijn/haar eigen denkwijze vandaan komen	☐	☐	☐	☐	☐	
Kan toelichten hoe bepaalde misvattingen zijn/haar eigen gedrag en/of denkwijze belemmeren	☐	☐	☐	☐	☐	
Herkent wanneer iets niet volgens plan gaat en past zich daaropvolgend aan	☐	☐	☐	☐	☐	
Kan belemmerende gedachten tijdens een training overwinnen	☐	☐	☐	☐	☐	
Kan belemmerende gedachten tijdens een wedstrijd overwinnen	☐	☐	☐	☐	☐	
Brengt in kaart wat hij/zij heeft geleerd.	☐	☐	☐	☐	☐	
Kan op klein niveau (een techniek, spelaanpassing etc.) bepalen wat hij/zij kan verbeteren	☐	☐	☐	☐	☐	
Kan op groot niveau (spel, leefstijl) bepalen wat hij/zij kan verbeteren	☐	☐	☐	☐	☐	
Analyseert prestaties systematisch en handelt naar deze analyse, zodat de prestaties verbeteren	☐	☐	☐	☐	☐	

Zelfvertrouwen						
Definitie: De tennisser is in staat vertrouwen te hebben en uiten in zichzelf, zijn/haar keuzes, doelen en kwaliteiten.						
Situaties waarin het gedrag is waar te nemen: • Presteren voor publiek • Wanneer het tegen zit • In het werken naar win-, verbeter-, of procesdoelen						
Gedragsindicatoren	**Gedragsindicatie**					**Toelichting**
De tennisser ...	**Helemaal niet aanwezig - Sterk aanwezig**					
Spreekt uit wat hij/zij wel en niet goed kan	☐	☐	☐	☐	☐	
Viert successen en neemt anderen daarin mee	☐	☐	☐	☐	☐	
Het observeerbare gedrag komt overeen met zijn/haar gedachten over zichzelf	☐	☐	☐	☐	☐	
Toon vertrouwen in het halen van gestelde doelen	☐	☐	☐	☐	☐	
Blijft rustig en kalm bij weerstand/tegenslag/pech	☐	☐	☐	☐	☐	
Kan zich op momenten van minder zelfvertrouwen blijven committeren aan zijn/haar spelplan en routines	☐	☐	☐	☐	☐	
Koppelt negatieve prestaties op de baan los van zijn/haar zelfbeeld	☐	☐	☐	☐	☐	
Laat moeilijkheden op school/studie niet van invloed zijn op zijn/haar zelfvertrouwen op de baan	☐	☐	☐	☐	☐	
Zijn/haar zelfvertrouwen is van meer dan alleen overwinningen afhankelijk	☐	☐	☐	☐	☐	
Toont lef, moed en zelfverzekerdheid	☐	☐	☐	☐	☐	
Komt zelf met punten voor verbetering in de toekomst en handelt hiernaar	☐	☐	☐	☐	☐	

Appendix B

Table B1

Fourteen illustrative quotations (one per competence) from the focus group.

The ability to

Focus
‘As the criterium for a player who is mentally well, you could say: ‘How long does it take the player to be concentrated again?’ This because players who are concentrated, barely have mental problems. So, if you can get your concentration back within twenty-five seconds, you don’t have trouble serving that match out, for example.’
Make decisions and oversee its consequences
‘It’s a matter of how do you come to your decisions? Who do you take with you and who not?’
Set and achieve goals
‘Being clear in what you need to achieve your goal. And follow up on that of course.’
Set and protect your boundaries
‘Players sometimes need to dare to be egoistic and choose for themselves.’
Make and adhere to you planning
‘Players need to think ahead, visualise their next week before it’s starts.’
Identify and solve problems
‘Players need guts, they need to be like: ‘hey trainer, I think something is up.’’
Reflect on your development and performance
‘One, I find it important that a player can analyse critically and honest on his own performance after a match or training. Two, I find it important that a player can translate this analysis to action; what to actually do with it?’

Adapt to changing circumstances
‘All of us tennis players think we can control our opponents by the things we do on court. However, we can’t. We can only control ourselves and we need to accept that change happens all the time around us.’
Communicate with your environment
‘The right people at the right level of information, at the right moment in time.’
Persevere
‘I think perseverance is the constant, unremitting, hundred percent commitment to your task, despite all the external factors.’
Create an optimal balance between all activities
‘To move the balance around tournament weeks to top sports. During this period, the player doesn’t permit himself anything anymore in sleep, nutrition, phone use, etc.’
Perform under pressure
‘To do your task in a certain way, with a certain quality whether there is pressure or not. If you do that, then you perform under pressure.’
Work process-oriented
‘When I want to improve my backhand and I don’t succeed immediately, I need to persevere. So, for this reason I also need to understand what working process-oriented is.’
Be self-confident
‘Your confidence shouldn’t only be based on results. It would be nice when you can get your confidence from working and improving on development goals.’