An Exploration of Influences of Drill-based Practice Design on Tennis Player Development: Delphi Technique

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Abstract: *The study aimed to explore experts' opinions concerning the drill-based practice design (DPD), and to propose a model of DPD based on the experts' consensus to develop tennis players' skills. The sample consisted of 18 China tennis coaches and professional athletes gained by purposive sampling. The instruments were a structured interview form, and a questionnaire developed by the researcher. The statistics employed for the data analysis was mean, standard deviation, and frequency. The findings were 1) The individual expert rated opinions towards the questionnaire at the highest level in 8 aspects of general concepts, pre-judgment and response, return of receive, baseline shot: ground stoke, backhand, volley, endurance training, and general opinions. The rests of 9 aspects of warm up, preparing posture, movement and footwork, service, forehand, smash, speed training, strength training, and flexibility were rated at a higher level. The total opinions of 17 aspects were at a higher level with the mean score of 4.48. The experts' consensus occurred in 3 items of 7, 11, and 51, out of 79 items, in the aspects of warm-up, preparing posture, and backhand, and it did not affect the aspect level as a whole, 2) The proposed model based on the experts' consensus, suggested by the researcher, consisted of three main factors of general concepts, practice procedures, and expected outcomes.*

Keywords: Drill-based Practice Design, Tennis player development, Delphi Technique

1. Introduction

Tennis has firmly established itself as a widely embraced and internationally engaged sport. However, the achievement of every tennis player is supported by a path marked by rigorous training, strategic planning, and steadfast dedication. In recent years, the domain of tennis player development has undergone significant transformations, mostly influenced by advancements in coaching methodologies, training approaches, and research within the field of sports science.

Drill and practice designs (DPD) places emphasis on the implementation of structured and repetitive drills that are customized to target specific abilities and objectives. The primary goal of DPD is to maximize the acquisition of skills, enhance performance, and foster long-term player development. According to the research [1,2]. There is a preference for drill-based practice tasks that prioritize the enhancement of mechanical consistency rather than adaptability. These preferences are supported by more detailed descriptions of the precise forms of practice being conducted in various sports. Researchers are increasingly advocating for practice that is both goal-oriented and accurately replicates the context-specific information required for performance in real competition. This approach is considered the most effective for skill learning and transfer [3].

The Delphi Technique is utilized as a methodological framework in this paper to collect expert opinions, insights, and recommendations. This study aims to shed light on the complex dynamics of DPD and its implications for tennis players at different levels of skill by employing an interdisciplinary approach that integrates components of sports science, psychology, coaching approaches, and player experiences. By means of this investigation, significant knowledge can be acquired to guide coaching approaches and enhance player development initiatives.

2. Literature Review

2.1 Theoretical Foundations of DPD

DPD is a behaviorist-aligned strategy that involves continually providing students with the same information until they reach mastery. DPD is commonly characterized by the presence of one or more of the prominent attributes outlined below:1) Decouple: The act of distinguishing and practicing the different components of a skill individually.2) Decomposition: a technique that involves breaking down complex motor skills into simpler components using drills.3) Skill repetitions are strategically designed to optimize the frequency of practice for a given skill[4]. Coaches hold the belief that prioritizing mechanical consistency rather than adaptability will result in more reliable answers in the performance setting [5]. DPD prioritizes intentional and organized training exercises designed to enhance particular abilities through repetition, feedback, and gradual difficulty. The fundamental idea of DPD is centered around deliberate practice, a concept that gained prominence via the work of psychologist Anders Ericsson. This concept suggests that expertise is predominantly obtained by intentional and organized practice, with the goal of enhancing particular skills. This theoretical framework highlights the significance of methodical and repetitive exercises customized to meet individual requirements and goals in promoting the learning of skills and improvement of performance [6].

2.2 Practical Applications and Challenges of Implementing DPD

Within the domain of tennis, the expression of DPD is evident through a wide array of training exercises that are meticulously designed to improve essential abilities, such as groundstrokes, serves, volleys, footwork, and mental resilience. These exercises are often organized in a methodical manner, forming planned sessions that focus on specific aspects of the game, such as improving technique, tactical awareness, physical fitness, and psychological preparedness. The implementation of DPD involves the deconstruction of complex abilities and techniques into activities that are more accessible and briefer. A study was to develop drill based model of forehand drive practice in table tennis for beginner athlete, It gave the impact on beginner athlete skills [7].

2.3 Delphi Process

The Delphi method is a procedure that involves polling a panel of experts to get a consensus or decision. Experts respond to several rounds of questionnaires, and the responses are aggregated and shared with the group after each round. The main purpose of the Delphi method is to encourage these experts to settle on a mutual agreement and to establish a group consensus.

3. Objectives of the Research

1). To explore the expert's opinions concerning the DPD.
2). To propose a model of the DPD based on the experts' consensus.

4. Method

4.1 Population and Sample

The population was the group of tennis experts in coaching by national team members, national champions, provincial-level champions, and professional high-level tennis players.

The researcher was able to collect complete data from 18 samples. The coaches (N = 9) are tennis experts who have 10-20 years of experience in tennis. These coaches represent tennis teams from different universities and regions, and they will provide practical insights on tennis training and education for research, which makes them highly qualified in providing valuable advice on technical and skill development. These coaches will provide a comprehensive perspective of practical experience and educational background for research. The professional athletes (N = 9) are those people who have rich competitive experience and outstanding results in the tennis match. Among them are members of the national team, national champions, and provincial champions. They are skilled in various technologies. Their insights will provide valuable practical insights for tennis training and education, helping to improve the skill level of tennis players.

4.2 Instruments

The Instruments used in this research were a structured interview focusing on the drill-based practice design (DPD), and a questionnaire created based on the information from 18 experts through 3 rounds as follows: 1) The Delphi Research Questionnaire Round 1 is an open-ended questionnaire developed from relevant theories and literature. Then, the researcher makes corrections based on the opinions of 5 qualified examiners. 2) The questionnaire for the second round of Delphi research was a closed-ended questionnaire on a 5-level rating scale similarly to all items of the questionnaire created in round 1. 3) The questionnaire for the third round of Delphi research was a closed-ended questionnaire in the form of a 5-level rating scale, which was similar to the questionnaire in the second round. In each question a median, interquartile range is indicated, (Interquartile Range) and the original answers of the experts in the past round. The questionnaire was sent back to the experts to view their own answers whether they want to confirm or change the answers.

The qualified examiners considered the in-depth interview questions and the questionnaire were appropriate at a higher level.

4.3 Data collection

The researcher performed data analysis according to the following steps.

1) The first round is to collect and analyze data from the answers to the questions. The researcher arranged them into sub-clauses and eliminated redundant information. To be used to create questionnaire in the second round of the questionnaire.

2) The second round is the analysis of data from the median and interquartile range using it as a basis for summarizing experts' opinions. Then take the obtained values shown in the 3rd round of the questionnaire for the experts to consider it again.

3) The third round is to analyze the data from the questionnaire using content analysis and data analysis using median and interquartile range.

5. Results

The research studied on "An Exploration of Influences of Drill-based Practice Design on Tennis Player Development: Delphi Technique" with the objectives of exploring the experts' opinions concerning the drill-based practice design, and proposing the model of the DPD based on the experts' consensus to enable tennis players, coaches, instructors and professional athletes to better understand key principles for enhancing learning transfer via improved the DPD in tennis sport.

The symbols used in data analysis include n = number of sample, $\overline{X}$ = average score, SD.= standard deviation, and * = remark of opinion deviation and consensus.

The analysis of collected data in the first, second, and third steps through interviewing and creating questions, feeding back, and finding experts' consensus conveyed in the following tables of 1-3.

Table 1: The results from individual expert response to the questionnaire (n =18).

Significant Issues Concerning Guidelines for DPD can develop tennis players.		$\overline{X}$	SD	Levels of Performance
1.General concepts				
1	It is de-coupled; Separating the different components of a skill and practicing them independently.	4.56	0.51	Highest level
2	It is a decomposition; Break down complex motor skills into smaller parts.	4.50	0.51	Higher level
3	It is to record the technical image in your mind, establish a valuable imagination, and then consciously repeat the actions.	4.72	0.46	Highest level
4	It is arranging training from easy to difficult	4.72	0.59	Highest level
	Sum	4.63	0.52	Highest level
2. Warm-up				
5	It ensures adequate physical and psychological preparation	4.78	0.43	Highest level

6	It is possible to warm up by running	3.28	0.57	Higher level
7	It is possible to conduct a specialized warm-up for tennis techniques (footwork movements, swings, etc.).	4.56	0.62	Highest level
8	It helps to feel body just sweating a little	3.94	0.73	Higher level
9	The warming up procedures should be done with dynamic stretching	4.56	0.51	Highest level
	Sum	4.22	0.57	Higher level
3. Preparing posture				
10	It is related to the core being to control the center of gravity(COG).	4.67	0.59	Highest level
11	It focuses the hitting point is the area between the hip and shoulder, which is the best comfort zone for hitting.	4.28	0.75	Higher level
12	It focused when hitting the ball, the arms should be fully extended, and the arms should not be too bent or pinched to hit the ball.	4.16	0.79	Higher level
13	Any return shot near the opponent's baseline must quickly return to its position on the field.	4.22	0.88	Higher level
14	At the moment of hitting the ball, gripping the racket grip is a crucial factor in hitting accurately.	3.89	0.83	Higher level
	Sum	4.26	0.77	Higher level
4. Pre-judgment and response				
15	It improves the ability to observe the situation on the field with your eyes and keep an eye on the incoming ball as soon as possible.	4.67	0.49	Highest level
16	It helps you to response to the characteristics of the upcoming ball through its height, direction, depth, speed, and rotation.	4.56	0.51	Highest level
17	Making objective strategic analysis in your mind, it can help you stay calm and be focused.	4.67	0.49	Highest level
	Sum	4.63	0.50	Highest level
5. Movement and footwork				
18	It ensures movement and footwork is the core of winning.	4.44	0.70	Higher level
19	It is prepared to move and hit the ball in any direction.	4.67	0.49	Highest level
20	It is to spend a lot of time on alternating movement training, that is, transitioning from defense to offense, or transitioning from offense to defense.	4.38	0.50	Higher level
21	It is to train players' reaction ability by using fast and random ball throwing.	4.39	0.78	Higher level
	Sum	4.47	0.55	Higher level
6. Service				
22	It is to use a good serve mode.	4.61	0.50	Highest level
23	It helps to know where to serve based on the opponent's situation.	4.83	0.38	Highest level
24	It changes the serving method by changing the speed, direction.	4.78	0.43	Highest level
25	It helps players focus on increasing the strength of their first serve to suppress opponents.	4.17	0.79	Higher level
26	It helps to recognize which side of the opponent's defense is weaker, or the gap in the serving area.	4.67	0.59	Highest level
27	It ensures all types of serve in the same position, with fixed raising points.	3.67	1.08	Higher level
28	It helps the players relax and imagine what kind of ball to serve, determine the serving route and how to win this point.	4.72	0.57	Highest level
29	It helps to recognize rhythm is the key to high-quality service, Movements should be smooth and continuous.	4.50	0.62	Higher level
30	It ensures knee bending and leg kicking are crucial.	4.28	0.67	Higher level
31	It helps players adopt a step-by-step service training method.	4.44	0.70	Higher level
	Sum	4.47	0.62	Higher level
7. Return of receive				
32	It ensures the primary goal of receiving a serve is to return the serve into the opponent's court.	4.61	0.61	Highest level

33	It ensures a strong first serve with cushioning.	4.28	0.75	Higher level
34	By observing the throwing and swinging movements of the server, it helps you predict the type of service. So you can react quickly to any type of serve.	4.61	0.50	Highest level
35	It ensures a good return of serve should have confidence, have an attitude of 'taking this point'.	4.61	0.50	Highest level
36	Simple reminders such as' keep your eyes off the ball, can help players maintain necessary concentration.	4.61	0.50	Highest level
37	It helps to pay attention to the training of players' stepping technique when receiving serve.	4.67	0.49	Highest level
	Sum	4.57	0.56	Highest level
8. Baseline shot: Ground stroke				
38	It ensures stability in the game is the primary tactical goal.	4.67	0.59	Highest level
39	It emphasizes the 3 "c" idea, including control, stability, and concentration. Athletes have solid baseline skills, stable hitting, and full of confidence.	4.94	0.24	Highest level
40	It focuses on wrist, racket, arm, body center of gravity transfer help to gain greater power and improve the racquet speed.	4.72	0.46	Highest level
41	It helps to reserve strength appropriately and shift the body's center of gravity from back to front.	4.61	0.50	Highest level
42	It ensures players need to have extraordinary patience.	4.67	0.49	Highest level
43	In a state of stalemate or balance, it is advisable to strike the ball as steadily and deeply as possible.	4.83	0.38	Highest level
44	In an attacking state, different ways can be used to hit the opponent's weak side.	4.61	0.61	Highest level
45	In a defensive state, if the opponent hits the ball quickly, the swing is generally small and the action is compact, hit deeply.	4.67	0.49	Highest level
46	It is to throw the ball in front of the player, control the throwing rhythm, and make 10-20 times per group.	4.50	0.51	Higher level
	Sum	4.69	0.47	Highest level
9. Forehand				
47	It is to use side forehand strokes as much as possible, as forehand strokes can generate greater force and allow the ball to rotate faster.	4.06	1.00	Higher level
48	It is to utilize linear and angular momentum to generate explosive force.	4.44	0.62	Higher level
49	It ensures the racquet movements should maintain a good rhythm.	4.56	0.51	Highest level
	Sum	4.35	0.71	Higher level
10. Backhand				
50	It ensures the game requires players to have penetrating backhand strokes as well.	4.83	0.38	Highest level
51	It helps to play a crucial role in turning movements.	4.44	0.98	Higher level
52	It helps players to be able to use one handed grip reasonably, backhand slicing, backhand extension racket to save the ball, backhand volley to the net.	4.61	0.61	Highest level
	Sum	4.63	0.66	Highest level
11. Volley				
53	It ensures an action requires a small swing.	4.72	0.46	Highest level
54	It ensures that control the action is crucial.	4.39	0.70	Higher level
55	It ensures the amplitude of the racquet should be small, and the trajectory of the racquet should be slightly higher than the height of the ball.	4.44	0.62	Higher level
56	It ensures one of the main sources of volleying power is the transfer of center of gravity and the utilization of the speed of the incoming ball.	4.56	0.51	Highest level
	Sum	4.53	0.57	Highest level
12. Smash				
57	It ensures that it is crucial to align the position of the incoming ball.	4.78	0.43	Highest level
58	It helps the players not to wait for the tennis ball to land before playing.	3.61	0.85	Higher level

59	It helps players to strive to keep their feet on the ground when playing high-pressure ball.	3.72	0.67	Higher level
	Sum	4.04	0.65	Higher level
13. Speed training				
60	It is arranged at the beginning of the training session.	4.22	0.73	Higher level
61	It ensures speed training focuses on intensity and quality rather than quantity.	4.50	0.62	Higher level
62	It is combining running techniques with tennis techniques.	4.67	0.49	Highest level
63	It ensures 2-3 speed training sessions per week.	4.22	0.73	Higher level
	Sum	4.40	0.64	Higher level
14. Strength training				
64	It ensures using the repetitive training method, the load intensity is between 80% and 100% of the maximum strength.	4.28	0.57	Higher level
65	It ensures strength training requires high standardization.	4.61	0.50	Highest level
66	It ensures apply jumping exercises to enhance the quick strength of the legs, and the landing motion requires a buffer time that should not be too long.	4.44	0.62	Higher level
67	It ensures the frequency of maximum strength training is 2-3 times per week.	4.33	0.69	Higher level
	Sum	4.42	0.60	Higher level
15. Endurance training				
68	It ensures endurance training is important for players of any type of play.	4.78	0.55	Highest level
69	It focuses on long and high-intensity hitting can effectively train tennis players' concentration and patience.	4.67	0.49	Highest level
	Sum	4.73	0.52	Highest level
16. Flexibility				
70	It ensures that flexibility training should be highly valued.	4.67	0.49	Highest level
71	It helps players enjoy the joy brought by stretching.	4.44	0.62	Higher level
72	It reduces feeling a tightness in the stretching area is to maintain the movement for about 15 seconds within 2 sets.	4.44	0.70	Higher level
73	It ensures purposeful relaxation of the body through breathing regulation during flexibility exercises.	4.33	0.84	Higher level
	Sum	4.47	0.66	Higher level
17.General opinions				
74	It is to have an exceptional athletic ability.	4.44	0.70	Higher level
75	It is to have strong patience and stability.	4.67	0.49	Highest level
76	The players should be aggressive on the field	4.44	0.70	Higher level
77	The players who have a more comprehensive baseline and net play will win the game.	4.61	0.61	Highest level
78	It is to have good tolerance, psychological resilience, perseverance, and fighting spirit.	4.89	0.32	Highest level
79	In the future, do you think the DPD will be useful for tennis player development?	4.72	0.46	Highest level
	Sum	4.63	0.55	Highest level
	Total	4.48	0.60	Higher level

Based on the findings shown in Table 1, the questionnaire received the highest ratings from individual experts in eight key areas, namely general ideas, pre-judgment and response, return of receive, baseline shot (ground stroke, backhand, volley), endurance training, and general viewpoints. A higher degree of rating was observed in the remaining nine components of warm-up, preparation posture, movement and footwork, service, forehand, smash, speed training, strength training, and flexibility. The collective opinions across all 17 elements were elevated.

According to table 2, by considering the S.D. value above .70, there were 21 items identifying some experts having opinions deviated from most of them (the mode). Those items were 8, 11, 12, 13, 14, 18, 21, 25, 27, 31, 33, 47, 51, 54, 58, 60, 63, 72, 73, 74, and 76 respectively.

Table 2: The results of experts fed back (n = 18).

No	Items	SD	5	4	3	2	1
8	It helps to feel body just sweating a little.	0.73	3*	12	2*	1*	
11	It focuses the hitting point is the area between the hip and shoulder, which is the best comfort zone for hitting.	0.75	8	7	3*		
12	It focused when hitting the ball, the arms should be fully extended, and the arms should not be too bent or pinched to hit the ball.	0.79	7	7	4*		
13	Any return shot near the opponent's baseline must quickly return to its position on the field.	0.88	8	7	2*	1*	
14	At the moment of hitting the ball, gripping the racket grip is a crucial factor in hitting accurately.	0.83	4*	9	4*	1*	
18	It ensures movement and footwork is the core of winning.	0.70	10	6*	2*		
21	It is to train players' reaction ability by using fast and random ball throwing.	0.78	10	5*	3*		
25	It helps players focus on increasing the strength of their first serve to suppress opponents.	0.79	7	7	4*		
27	It ensures all types of serve in the same position, with fixed raising points	1.08	5*	4*	8		1*
31	It helps players adopt a step-by-step service training method.	0.70	10	6*	2*		
33	It ensures a strong first serve with cushioning.	0.75	8	7	3*		
47	It is to use side forehand strokes as much as possible, as forehand strokes can generate greater force and allow the ball to rotate faster.	1.00	8	4	5*	1*	
51	It helps to play a crucial role in turning movements.	0.98	11	6			1*
54	It ensures that control the action is crucial.	0.70	9	7	2*		
58	It helps the players not to wait for the tennis ball to land before playing.	0.85	2*	9	5	2*	
60	It is arranged at the beginning of the training session.	0.73	7	8	3*		
63	It ensures 2-3 speed training sessions per week.	0.73	7	8	3*		
72	It reduces feeling a tightness in the stretching area is to maintain the movement for about 15 seconds within 2 sets.	0.70	10	6*	2*		
73	It ensures purposeful relaxation of the body through breathing regulation during flexibility exercises.	0.84	10	4*	4*		
74	It is to have an exceptional athletic ability.	0.70	10	6*	2*		
76	The players should be aggressive on the field.	0.70	10	6*	2*		

Table 3: The results of experts' opinion consensus (n =18).

	Significant Issue Concerning Guidelines for DPD can develop tennis players	Old $\bar{X}$	Old SD	New $\bar{X}$	New SD
7	It is possible to conduct a specialized warm-up for tennis techniques (footwork movements, swings, etc.).	4.56	0.62	4.61	0.50
11	It focuses the hitting point is the area between the hip and shoulder, which is the best comfort zone for hitting.	4.28	0.75	4.33	0.69
*51	It helps to play a crucial role in turning movements.	4.44	0.98	4.61	0.50

According to table 3, there were 3 items that the mean scores had been changed based on the experts' consensus. Those items were 7, 11, and 51. The experts identified their reasons for the consensus as follows;

Item7, the new mean score was 4.61 (It is possible to conduct a specialized warm-up for tennis techniques (footwork movements, swings, etc.), expert NO 3 gave the reason that if there were teammates who could warm up together, he preferred to engage in various hitting exercises in simulated matches

with them, so that he would be better prepared to deal with various situations, including fast movements, swings, volleys, etc.

Item 11, the new mean score was 4.33 (It focuses the hitting point is the area between the hip and shoulder, which is the best comfort zone for hitting.), expert NO 17 gave the reason that the hitting point was more suitable near the waist.

Item 51, the new mean score was 4.61 (It helps to play a crucial role in turning movements.), expert NO 1 gave the reason that some players might place more emphasis on arm techniques and swing movements, as proper arm movements could generate sufficient strength and control, while turning movements were not the only key, he agreed that turning was still very important in the backhand hitting process.

6. Conclusion and Discussion

6.1 Conclusions

1) The individual expert rated opinions towards the questionnaire at the highest level in 8 aspects of general concepts, pre-judgment and response, return of receive, baseline shot: ground stoke, backhand, volley, endurance training, and general opinions. The rests of 9 aspects of warm up, preparing posture, movement and footwork, service, forehand, smash, speed training, strength training, and flexibility were rated at a higher level. The total opinions of 17 aspects were at a higher level. The experts' consensus occurred in 3 items (items 7, 11, and 51) out of 79 items, in the aspects of warm-up, preparing posture, and backhand, and it did not affect the aspect level.

2) The proposed model based on the experts' consensus, suggested by the researcher, consisted of three main factors of general concepts, practice procedures, and expected outcomes.

6.2 Discussions

The study yielded results that demonstrated a high level of adherence to the general concepts of the DPD. This phenomenon can be attributed to the decoupling of several components of a skill, allowing for independent practice of each component. The process involves decomposing difficult motor skills into smaller components. The process involves mentally capturing the technical image, cultivating a valuable imagination, and thereafter consciously replicating the activities. This involves organizing training sessions in ascending order of difficulty. The acquisition of skills plays a crucial role in the growth of tennis players. This helps athletes to have a deeper understanding of each skill point. A research supports this viewpoint, stating that breaking down complex motor skills into smaller parts and gradually increasing difficulty through repeated training can help athletes better master their skills and improve their performance [8]. The development of the DPD necessitates the implementation of several repetitions, rehearsals, and exercises, which serve to solidify and mechanize skills. By engaging in repetitive training, athletes have the ability to convert their talents into enduring memory and enhance their level of performance. A research supports this viewpoint that through skill decomposition and repetitive training, athletes can more effectively improve their skill levels and perform better in competitions [9].

Results of the study were found to be at the highest level. Tennis is a sport with high physical fitness requirements, and players need to possess excellent explosive power, speed, flexibility, and coordination. A research found that good athletic ability is crucial for outstanding performance in competitions [10]. Players need to have excellent patience and stability to maintain a high level of performance in the game. Patience and stability help players stay calm and focused under pressure. Successful tennis players also need to possess aggression. They should be able to initiate attacks, create opportunities, and gain an active position, rather than just reacting to their opponents' shots. Excellent tennis players need to possess comprehensive skills in both baseline and dribbling. This comprehensiveness enables them to perform well in different competition scenarios and cope with various challenges. Tolerance, psychological resilience, perseverance, and fighting spirit are crucial psychological traits for overcoming setbacks, maintaining a positive competitive state, and performing well at critical moments. Psychological resilience and perseverance can help players overcome stress and adversity.

This study enhances our comprehension of how to foster tennis proficiency and close the divide between coach expertise and athlete growth. This study encompasses multiple facets of enhancing the skills of tennis players. According to the findings of this study, numerous coaches and athletes have provided more clarification on the crucial aspects of developing different talents in tennis and the

significance of training various physical attributes. These contents serve as the basis for enhancing training courses, creating focused workouts, and implementing them in daily training and competitions. Based on the feedback received from coaches and athletes, it can be observed that they have demonstrated commendable performance in practical applications, cultivated pertinent tennis abilities, and eventually enhanced their performance on the tennis court.

The proposed by the researcher in details for the purposes of more effective outcomes can be expanded as the following figure; consisted of three main factors of general concepts, practice procedures, and expected outcomes. The author proposes the model can develop the forehand, backhand and combined hitting ability of tennis players (Table 4).

Table 4: The Proposed Model of Drilled-based Practice Design (DPD).

| The key concepts, Procedures, and Expected Outcomes of 90-minute Practice		
General Concepts	Procedures	Expected Outcomes
1.It is a model of de-couple because in baseline hitting training, it is first necessary to separate different hitting elements and practice independently, this means that tennis players will practice forehand and backhand techniques separately to ensure that each technique receives appropriate attention and improvement. 2. It is a model of decomposition because breaking down the baseline hitting technique into smaller parts helps the tennis players better understand and master the essentials of each hitting action including the correct way to grip the racket, swing movements, body balance, and eye focus, which are needed to be decomposed and practiced intensively. 3. It is a model of repetition because the DPD emphasizes planning to replicate the same skills to the greatest extent possible, in baseline hitting training, the tennis players need to constantly repeat the same skill hitting, movements to deepen memory, improve the skill levels, and cultivate muscle memory, frequent practice helps to consolidate the skills.	Step1: Warming up, this is to conduct the warm-up exercises on movement and footwork within the field to enhance the flexibility and increasing speed of the feet gradually, then do the dynamic stretching, focusing on extending the legs, arms, and upper body in 10 minutes. Step2: Forehand hitting training, this is to focus on forehand hitting techniques, gripping posture, swinging movements, and timing of hitting the ball accurately, sufficiently high and deep shots through 3 dimensions of hitting the ball in a straight line direction, hitting the ball diagonally, and striking the ball in a combination of straight and diagonal directions in 20 minutes. Step3: Backhand stroking, this is to focus on backhand hitting techniques, gripping style, hitting movements, and timing of backhand hitting accurately and control of the ball, through 3 dimensions of hitting the ball in a straight line direction, hitting the ball diagonally, and striking the ball in a combination of straight and diagonal directions in 20 minutes. Step4: Forehand and backhand combined with mobile hitting, this is to focus on moving on the baseline, combining forehand and backhand techniques to hit the ball, change direction and control movement, the numbers of practicing as a whole will be about 100 times in 25 minutes. Step5: Relaxation exercising, this is to do the static stretching, focusing on the arms, legs, and back in 10 minutes. Step6: Giving Feedback and Summarizing, this is to provide personal feedback, emphasizing the key points of improvement and development, the tennis players summarize the course, raise questions or areas that require further practice.	1.Improvement of motor skills, those are the improvement of baseline hitting, forehand, and backhand hitting skills 2.Physical development, those are the development of speed ability, endurance, body strength, and flexibility. 3.Psychology development, those are the development of mental control, consistency, concentration, cultivation of resilience, tolerance, confidence, and anxious reduction.
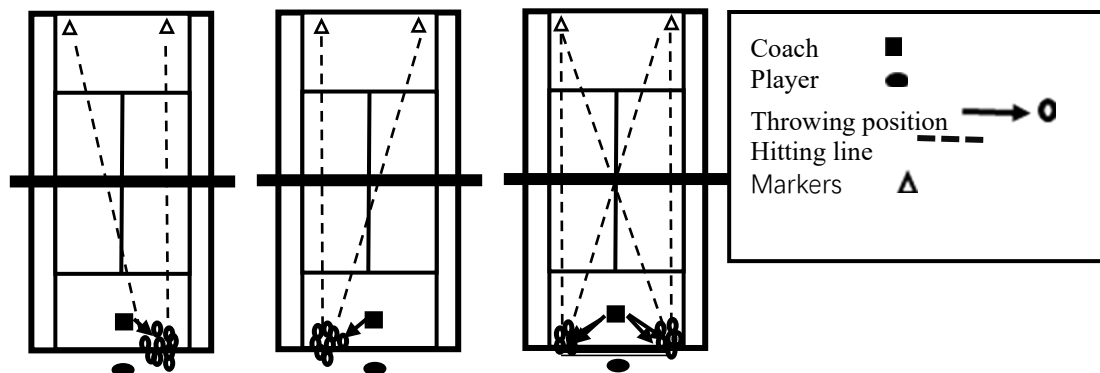
Figure 1: Forehand, backhand and combined hitting.

Based on the proposed model of DPD, Figure 1 shows the development of tennis players' baseline hitting ability, including forehand(step2), backhand (step 3), and combined hitting (step 4). The coach can throw the ball by hand or feed the ball with the racket. The number of groups and the number of hits per group can be controlled based on the player's completion quality. The player can hit the ball again near the baseline. Key details of training based on the 3 steps mentioned above for skill combination:

1) The player fully accumulates force in their hind legs, pushes on the ground, and utilizes the ground reaction force.

2) The player's arms are relatively relaxed, making a whipping motion.

3) Players should store their energy appropriately and move their body center of gravity forward, During the entire hitting process, the player maintains body balance and upper body upright while completing the whip action with their arms.

4) The coach throws the ball at a moderate pace, raising it high enough to give players ample preparation time to adjust their body posture, and prepare for energy storage and acceleration.

To summarize, this study enhances our comprehension of how to foster tennis proficiency and close the divide between coach expertise and athlete growth. This study encompasses multiple facets of enhancing the skills of tennis players. According to the findings of this study, numerous coaches and athletes have provided more clarification on the crucial aspects of developing different talents in tennis and the significance of training various physical attributes. These contents serve as the basis for enhancing training courses, creating focused workouts, and implementing them in daily training and competitions. Based on the feedback received from coaches and athletes, it can be observed that they have demonstrated commendable performance in practical applications, cultivated pertinent tennis abilities, and eventually enhanced their performance on the tennis court.

Additional research in this field can also be extended to many athletic competitions, like badminton, table tennis, basketball, and others. The methodologies employed in this study have the potential to enhance athletes' performance, bolster coaches' capabilities, and foster greater prospects for success in athletes' development. This study utilizes the DPD framework to examine the growth of tennis players, gathering professional perspectives on the subject. The research findings can be utilized in future tennis training, instruction, and tournaments.

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