

How to Coach World-Class Athletes of Table Tennis

Techeng Wu¹ and Piren Su²

¹Table Tennis Team, National Tsing Hua University, Hsinchu, Taiwan
(+886-911323888 ; hs3897@nc.hcc.edu.tw)

²Beijing Sport University, Beijing, China
(+286-10-62970020 ; su_piren@hotmail.com)

Abstract: The success of world-class table tennis players heavily relies on the training program provided by their coaches. Although there are unique characters of individual athletes, in this study we summarize the common experience of their coaches in training preparation. We targeted Chinese top coaches and researchers of the sport science of table tennis to understand their philosophy and methodology to help talented players become successful as well as maintain the performance of world-class athletes at the highest level.

Keywords: top table-tennis coach, coaching philosophy, successful experience

1. INTRODUCTION

The success of world-class table tennis players heavily relies on the training program provided by their coaches. Although there are unique characters of individual athletes, in this study we summarize the common experience of their coaches in training preparation. We targeted Chinese top coaches and researchers of the sport science of table tennis to understand their philosophy and methodology to help talented players become successful as well as maintain the performance of world-class athletes at the highest level.

2. METHOD

China's 20 best table tennis coaches and research and development personnel are the main subject of investigation by this thesis, which adopts the approach of induction as the method of study.

3. RESULT

3.1 Liang Zhuo Hui

He is one of China's first generation table tennis athletes and the coach for China's first world champions. He had changed Mainland China's table tennis team from a second-class one into a formidable team in the world. In order to catch up with European teams and surpass Japanese teams, he told his athletes, "Some foreigners looked down upon us because we are not strong enough to defeat them. We ought to earn respect for ourselves, try real hard and catch up; when they take one step forward, we must take two or more steps!" He studied every styles of play of foreign players and compiled a book on styles of play and features of each athlete in the world's top ten table tennis teams, and he led his athletes to study and discuss this book. He ordered athletes to exert themselves in basic trainings so as to challenge the world's top players. With high recognition in scientific exploration, he recorded in detail the training program, match performance, styles

of play and draw backs of each athlete and tried to make improvements accordingly. He was prudent and willing to learn from others; he was a thinker. With beneficial experiences learnt from matches, he summarized efficient types of shots and tactics such as cross-lift straight shot, center shot and quick against slow, close against deep, distract the opponent and gain control, etc.

In his opinion, three qualities are required for an excellent player to reach the top level in the world: precise and admirable in his/her scoring type of shot; steady, strong and sturdy in skills; capable of adapting to various styles of play.

3.2 Liang You Neng

He coached master choppers such as Zhang Xie Lin, Lin Hui Qing, Zheng Min Zhi, Wang Jun, Huang Liang, Lu Yuan Sheng and Chen Xin Hua, as well as fast attackers such as Hu Yu Lan, Shi Zhi Hao and Fan Chang Mao.

He pointed out the principle behind bettering skills: mistakes, hard work, and improvement; and more mistakes, harder work, and further improvement. In his opinion, an excellent coach will not only coach athletes who inherit his/her own style of play, but also coach athletes who differ a lot from his/her style of play; he believed the coach should, besides teaching an athlete everything, teach in accordance with the athlete's aptitude, offering pertinent and foreseeing coaching.

He emphasized subliming and abstracting theories with long-term accumulation of experiences, taking position arrangement in matches into serious consideration and prudently planning training programs in each year and seeking innovations. He warned young players that "never fight for worthless vanity, keep your feet on the ground."

3.3 Zhuang Ze Dong

Behind a world champion are the coach's proper training and vision. As the saying goes, "the heart of military forces is the general, and the heart of the

general goes to strategies,” he believed that it allows athletes to avoid detours and take the right path by taking guidance from highly qualified coaches and proper guidance and corrections in technical moves, training practice, development orientation, as well as in thinking and accomplishments, hence acquire advantages. His training practice was highly focused on the concept of speeding and stopping – the “3 fast moves” of fast stepping, fast stopping and fast returning to position. He selected athletes by expression in their eyes and their capability of reaction and balance as well as flexibility and agility. He believed that a coach should be courageous and innovative, capable of integrating advantages from various styles of play and form his/her own style. The training for table tennis athletes draws from a wide range of physical, technical, intellectual and mental practices instead of merely physical activities. Training requires specific architecture and structure as well as various methods, studies and artistic practices. An athlete is required to be well trained in his/her physical skills, as well as enriched in his/her character.

3.4 Xu Yin Sheng

Based on the history of table tennis and experience from his own practice, Xu Yin Sheng suggested three qualities for “how to be an excellent coach”: perceptive insight on the trends of table tennis; good at capturing his/her inspirations; innovative.

3.5 Zhuang Jia Fu

Two key points in table tennis training: training guidelines shall be specific, and differences among training focuses shall be distinguished.

Training guideline: The training for primary skills shall be more active; the scoring tactics shall be emphasized; the adaptability to various styles of play shall be more rounded, and; the tactics shall be diverse.

Differences among training focuses:

For young players, step practice and the basic training of primary skills shall be of highly importance, and solutions shall be found in three aspects: 1. To enhance the judgment on spin, judgment and reflection on direction, and to comprehend patterns therein. 2. To combine speed and strength. 3. To coordinate steps and strokes, especially to ensure agile and swift steps.

For national teams, the objective of training is for an athlete to be the world’s top player, especially in his/her high loop shots and the ability to cope with loops: 1. Try to gain control within the first three strokes. 2. Gain control with advantages in speed and angle. 3. Improve the time and stroke against loops, and distinguish the protracted rally and zone of counterattack.

3.6 Wu Huan Qun

A researcher of China Institute of Sport Science. In his cooperation with China’s national table tennis team, he had found solutions to numerous difficulties in

training practice, such as pen-hold backhand attack with reverse surface, study on doubles game, 3-phase index training approach, etc.

He pointed out that three relationships shall be noted during table tennis training:

Relationship between outstanding primary, scoring tactics and rounded skills.

Relationship between basics and application in single-item training, integrated training, multiple-ball training and competition training.

Relationship among winning factors during tactical training.

In addition, his experience in the combination of single-ball training and competition practice is summarized as the following: flexible training for fixed approaches; step exercises along with stroke practices; keep the right in mind when practicing on the left; keep middle table zone in mind during close-table practices; find chances to exert strength during slowed movement practice; implement practices according to patterns commonly seen during matches.

3.7 Li Ping Zhi

Good at offer trainings according to the physical characteristics and featuring skills of each athlete. Always hold a preparation meeting before match, and provide reviews after match, learning advantages of other teams to improve from drawbacks of his own team. He liked to encourage athletes to earn respect and honor for the country with supreme skills, strong will and robust physical conditions as well as overcoming overconfidence.

He pointed out issues to be noted during training:

- 1.Unaltered and flexible training practices.
- 2.Reflection and variation.
- 3.First three strokes and protracted rally.
- 4.Primary skills and ordinary skills.
- 5.Active attack and active defense.
- 6.Fast and aggressive, and steady and accurate.
- 7.Single line and multiple lines.
- 8.Fixed point and alterable points.
- 9.Strokes and steps.
- 10.Coach and trial horse.

3.8 Yang Guang Yan

He summarized the emphases in the training of Cai Zhen Hua’s provincial team:

Compete with burden, which is a psychological training for athletes to adapt to competition with pressure. Winning was required and different requirements were assigned according to various opponents.

1.Physical training was emphasized.

2.Training requirements were specified for the first three strokes, emphasizing rhythm, dropping point and spin.

3.Training methods: trial horse being teammates, trial horse being coach (frequent), trial horse at both sides,

and 2 vs. 1.

3.9 Cai Zhen Hua

The head coach who led China's men's team to the peak once again from the valley in the 1990s. His primary focus in building the team was to enhance their confidence and morale; one of the reasons for his success was his trust in the coach team, which was consisted of young, motivated coaches with the assistance of highly comprehended theoretical knowledge; he had the courage to employ capable new coaches; innovation was emphasized, and the trends and current circumstances in the world of table tennis were timely comprehended; he matched new players with experienced athletes; player deployment and position arrangement was of highly focus; he changed the approaches for training and in-team matches, increasing new players' experience of overseas competition; disciplines were strictly executed, and; scientific research and other assistance were adopted for his strategy, leading the team back to the world championship within 6 years. In his opinion, Mainland China has an absolute advantage in women's team, whilst men's team is short of advantage in technical department; however, the latter shared the advantage in sufficient preparation, high pertinence and in psychological advantages. He has a strong sense of urgency.

3.10 Lu Yuan Sheng

He focused on the talent and the cultivation of character of athletes. He coached Ding Song with the style of chopping attack, which emphasized attack while keeping both attack and defense feasible. He emphasized enhancing forehand attacks on the basis of backhand spin variation, and the service training was intensified, especially the short service. He required perfection in techniques and proper confidence, helping Ding Song to overcome self-contempt by inviting senior athletes like Xu Yin Sheng and Li Fu Rong for encouraging talks and arranging opponents that Ding Song was most afraid of for competition practice – by such, his confidence and capability to undertake pressure were improved, providing him with a psychological foundation for matches. He used to tell extremely nervous athletes to hop along, which helped them to relax. He also instruct athlete to forget about match scores and keep on attack and attack, removing their psychological barriers and leading them to win.

3.11 Li Xiao Dong

Former head of training and researching team in China Men's Table Tennis Team.

He believed that in local or national competitions, a better return of service would help athletes, taking advantage of protracted rally, achieve better performance in matches within China. He requested in

national team improved recognition on theories for technical issues such as steps, active attacks and attack from protracted rally. When new issues were found, he often had athletes pointing out the issue for joint discussion; he never forced athletes to obey his opinions, instead, he encouraged them to spontaneously accept new circumstances during their own practice. His emphasis in his guidance for athletes is reflected in the toughness of his athletes against any opponent.

3.12 Yin Xiao

Former head of training and researching team in China Women's Table Tennis Team. He believed that certain process is required for innovation, and the team would be hopeless if they adopt the existing styles of play. In 1991, he put all her endeavor in finding the solution for several technical difficulties in pen-hold backhand attack with reverse surface: backspin high lift, left large-angle return of service, and topspin push-and-block with flick shot – with which Liu Guo Liang won over the world's reputation overnight. He realized that, during the consummation of new techniques, an athlete's basics and overall skill should reach a world-class level before he/she plays the leading role.

3.13 Zhang Xie Lin

“28 Qualities” required in a coach:

Moral character:

1. Loyal to his/her country.
2. Filial to his/her parents and the elderly.
3. Compassionate to public services.
4. Forgiving in daily life.
5. Honest toward the others.
6. Responsible for his/her own career.
7. Never seek filthy lucre.

Management and disciplines:

1. Regretful for his/her mistakes and demerits.
2. Patient and persuasive for repeating mistakes of teammates.
3. Influential for solutions to conflicts among athletes.
4. Understandin for different opinions among athletes.
5. Just for incident solutions, overseas assignment decisions and competition event participant decisions.

Training:

1. Undivided during training.
2. Prudent in preparation training.
3. Curious towards new things and innovative technologies.
4. Considerate in program and tactic planning.
5. Calm before competition.
6. Confident before match begins.
7. Ambitious to challenge strong opponents.
8. Prudent and careful when dealing with weaker opponents.
9. Never let down his/her guard when in lead.
10. Never be discouraged when falling behind.
11. Persevering during protracted rally.

12. Decisive at critical moments.
13. Enduring when facing difficulties.
14. Modest towards victory.
15. Open-minded towards defeat.
16. Stick together to accomplish tasks.

3.14 Zhou Lan Sun

He coached best players such as Zhang De Ying, Cao Yan Hua, Qi Bao Xiang and Tong Fei Ming; he believed that the most importance quality for table tennis was tenacity – as long as you keep on practicing, you will achieve better performance. His training methods include: firstly, free-hand practice, in which a movement is to be repeated for hundreds of thousands times; secondly, contemplation, which is to imagine a fierce competition and the opponent is using certain style of play, requiring certain tactics and countermeasures to win over the game...etc. He was self taught in technical trainings, and he believed that roads are made from exploration at places where no roads existed, and that the more difficult is the condition, the more improving it is. He suggested athletes to learn, both obviously and secretly.

3.15 Ma Jin Bao

During 20 years of coaching in Mainland China's women's team, he found that women players share common characteristics including: lack of confidence, lower receptivity, and spends more time in training. He believed that an athlete should be ambitious, and feasible objectives should be made for further encouragement and performance review; critical issues shall be comprehended and explained in detail, so that the athlete could understand and communicated, and; all the endeavor shall be exerted so as to ensure the quality of training. An athlete's primary scoring tactics shall be recognized, and the disagreement between the coach and the athlete shall be properly coped with. The coach shall be responsible and understanding to the mental state of his/her athletes, hence ensure a rewarding efficiency in his/her guidance.

Technically, the coordination between the arc and timing of a stroke shall be recognized; with the principle of joint force, guide the direction of forces from each body part to stay in accordance with the direction of outgoing ball; the strength shall be properly controlled, determined, from observation, according to the strength exerted by the opponent; the relationship between body parts with leading force and the dropping point of incoming ball shall be noted, in which the player shall properly determine which body parts to exert, such as fingers, wrists, forearm, upper arm, waist, hip, thighs, shanks or forefoot, as well as the amount of strength to be exerted. In said case, strength exerted from the fingers may produce the following effects: hard to return the spin, easily increasing spin, sudden change in stroke, easily produce the ideal arc, etc.

3.16 Wang Lian Fang

Cao Yan Hua's first coach.

She believed that, for elite athlete, the training shall be stricter, and more exercise and more joint practices with male athletes are required. During competition, the athlete is required to think more and response according to circumstances, gaining the capability to cope with various types of shots and spontaneously, fully exert his/her potentials. She taught her athletes to cherish every minute in training course, try to make every stroke the best stroke, complete preparation before training commences and never spend too much time in preparation. A coach should try his/her best, exert all the strength, passion and love to coach a best athlete.

3.17 Liu Guo Liang

Head coach of China's National Men's Team

With the emphasis on personalized training, he gradually adjusted the proportion between routine training and personalized training; provide solutions in accordance with issues newly emerged in details and sessions during matches; he thinks highly of the competition system for event participant selection, hence arranges diverse and highly-demanding simulation matches based on the 11-point scoring system so as to exercise the mental and intellectual capacity of athletes. Said simulation matches include Round Robin Rankings, Promotion Tournaments, Championships, Point Spreads, 6-Point and Sudden Deaths. The guidelines adopted during his coaching from 2004 to 2008 for Beijing Olympics include: technical innovation, competition system, physical enhancement and strict management.

3.18 Shi Zhi Hao

Head coach of China's National Women's Team.

He believed that technical advantage is more important than the short-lived scores, and it is a sure path for women's table tennis technique to become similar to that of men's in order to reach the leading position in the world.

The guidelines adopted during his coaching from 2004 to 2008 for Beijing Olympics include: difficulty-oriented training; pertinent confronting training; partial zone control training; unexpected circumstances training; integrated training; calmness training; primary tactics training. The training reviews during Olympics include: new tactics, new concepts and new contents; solutions to large age and education difference among team members; improvement in communication between the national team and local teams; enhance coaching for talent reserves.

3.19 Wu Jing Ping

He is the coach assigned for Ma Lin and Wang Hao.

He believed that the major key to his success is the innovation in multi-ball training combined with

confronting competition games. Trainings are arranged in accordance with the level of an athlete. Young players are mostly trained with multi-ball training program, which is to efficiently increase the intensity and consistency of training, focusing on establishing the scoring tactics according to the characteristics of an athlete; high-level players are mostly trained with single-ball program that efficiently increases the intensity and difficulty of training, focusing on providing tactic-integrated trainings according to tactics required for the athlete in matches.

3.20 Qin Zhi Qu

He is the coach assigned for Ma Long and Xu Xin.

He believed that the key in training is all-round management. A coach shall focus on finding drawbacks of an athlete in matches and help them find the solution of found problems accordingly, which are also the problem needed to be solved during training. The coach shall apprehend information on major competitors and the growth of young, elite athletes in teams overseas, hence analyze their featuring tactics and drawbacks. The athlete shall be taught to acquire his/her own long-term goals and the objective in the near future, increase his/her recognition of honor and accomplish goals through fierce competition.

4. CONCLUSION

Although they have their very own opinions and visions, the 20 well-known coaches and research personnel described above share a profound comprehension of the rules to victory in the world of table tennis, as well as that all of them have been concerning the new circumstances in the development of table tennis (sharing highly capable insights), teaching athletes (not only with focus on training for athletes' skills, tactics, physical and psychological conditions, but also emphasize on intellectual education and continuously improve their moral character and will power), and they share a strong sense of innovation.

REFERENCES

- [1] Zhuang Jia Fu, *"Two Existing Key Issues in China's Table Tennis Training"*, Table Tennis World, P11, Vol. 2, People's Sports Publishing House, 1982.
- [2] Wu Huan Qun, *"Brief Discussion on Three Relationships in Table Tennis Training"*, Table Tennis World, Page 17, Vol. 2, People's Sports Publishing House, 1982.
- [3] Liang Zhuo Hui, *"All Flowers Blooming, Variety Booming"*, Table Tennis World, Page 10, Vol. 2, People's Sports Publishing House, 1983
- [4] Xu Yin Sheng, *"Thoughts"*, Table Tennis World, p11, Vol. 4, People's Sports Publishing House, 1991.
- [5] Yin Xiao, *"Technique and Application of Penholder-Grip Backhand Shots"*, Table Tennis World,

- p42, Vol. 3, People's Sports Publishing House, 1992.
- [6] Li Xiao Dong, *"Preliminary Study on Table Tennis Training"*, Table Tennis World, Page 35, Vol. 1, 2, People's Sports Publishing House, 1993.
 - [7] Su Pi Ren, *"Chinese Sport Technology – Study on Long-lived National Sport"*, Page 9~17, 1997.
 - [8] Lu Yuan Sheng, *"Discussion on Chop Shots"*, Table Tennis World, P 29, Vol. 3, People's Sports Publishing House, 2000.
 - [9] Su Pi Ren, *"Modern Table Tennis Teaching and Training"*, People's Sports Publishing House, 2003.
 - [10] Wu De Cheng, *"Strategic Research on Development of Table Tennis as a Competitive Sport in Taiwan"*, Dissertation for PhD Degree, Page 63~68, Beijing Sport University, 2003.
 - [11] Wu Jing Ping, *"Training for Table Tennis Shots with Penholder-Grip and Inward Pimpled Rubber"*, People's Sports Publishing House, 2008.
 - [12] Liu Guo Liang, *"Build Up Personality, Coach a Winner"*, Table Tennis World, Page 68, Vol. 1, People's Sports Publishing House, 2009.
 - [13] Shi Zhi Hao, *"In 2009, Everyone Back to Where It Started"*, Table Tennis World, Page 70, Vol. 1, People's Sports Publishing House, 2009.