

# *The impact of mental training on learning and satisfaction of beginner college students in tennis*

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**Abstract:** Tennis consists of four parts: techniques, tactics, mental control, and physical fitness. However, training mainly focuses on techniques and tactics, with some advanced players practicing physical fitness but seldom covering mental training. Mental control is often lacking. During a tennis match, players often yell "come on" to cheer themselves up after hitting a winner. Facts have indeed proved that after shouting "come on", the performance of athletes in the next point will significantly improve. This kind of self-psychological suggestion not only has the effect of deterring opponents, but also helps players cheer up. Similarly, we often see that after losing a key point at a critical score, if the balance tilts, players may lose the whole game quickly. These performances are all caused by psychological factors. In college tennis groups, in addition to teaching techniques, tactics, and physical fitness, psychological training should be carried out appropriately to ensure players can perform normally at critical moments.

## **1. Mental training**

Mental training, also known as "mental toughness training" or "sports psychology," is any training that helps athletes improve their mental skills. The goal of mental training is to help athletes develop the mental strength, resilience, and focus they need to perform at their best. Mental training can include things like relaxation techniques, visualization, positive affirmations, goal-setting, and stress management. The goal is to help athletes cope with the mental demands of competitive sports and handle the ups and downs of competition. Mental training can be helpful for athletes of all levels, from beginners to professionals.

## **2. Characteristics of tennis**

Tennis is a technique-driven competitive sport between the nets. The players have ample time to think between points, and during this time, their mental processes are active and either positively or negatively affect the outcome of the match. As tennis technique has progressed, so has the player's physical abilities, evolving with each passing year. New approaches are becoming increasingly mature, and the evolution of tactics is highly dependent on the variety of techniques available. Mental control skills have been overlooked for a long time because of the shorter development time. As such, these skills are still at a relatively low level overall. Tennis training consists of a combination of

physical training and mental training. The mental training typically focuses on things like agility, speed, strength, and stamina. Tennis players need to have excellent endurance, quick reflexes, and explosive power. The physical training also includes practicing specific tennis skills, such as hitting groundstrokes, volleys, and serves. On the mental side, tennis training includes exercises to improve focus, concentration, and mental toughness. Players might also work on visualizing success, managing emotions, and overcoming distractions.

### 3. Psychological characteristics of college student group

College students in China are a diverse group of young adults pursuing higher education at universities and colleges across the country. They experience a range of academic, social, and personal challenges similar to college students in other parts of the world. China has a large and rapidly growing higher education system, with millions of students enrolled in various fields of study, including science, engineering, humanities, social sciences, and more. These students often face academic pressures, competitive entrance exams, and a strong emphasis on success in their studies. Socially, they navigate relationships, campus life, and extracurricular activities. Additionally, they may encounter challenges related to cultural transitions, as many students come from different regions of China or even other countries to attend college. Like college students globally, mental health awareness and support have been gaining importance in China's higher education institutions due to the increasing recognition of the mental health challenges students may face, college students are generally going through a time of intense self-exploration and personal growth. They're learning about who they are, what they want out of life, and how to balance their personal, academic, and social lives. They're also developing their own unique sense of identity, which can involve trying out new things, taking risks, and making mistakes. At the same time, college students are also trying to figure out how to be independent and take responsibility for their own lives. A lot of college students are dealing with a lot of change, uncertainty, and pressure. This can lead to mental health challenges like stress, anxiety, and depression. In addition, college students may be struggling with homesickness, loneliness, social anxiety, and perfectionism. Many of them are also trying to balance academics, work, and social life, and this can be a lot to juggle. Some students may even have to cope with major life events, like the loss of a loved one or a breakup.

### 4. How to use mental skills

Jack J. Lesyk [1] in *The Nine Mental Skills of Successful Athletes* presented mental training include 9 skills and 3 levels: Choosing and maintaining a positive attitude before learning tennis is all about nurturing a growth mindset, reframing setbacks as learning opportunities, and staying focused on the joy and satisfaction that comes with improving your skills and enjoying the game. Surrounding yourself with supportive, positive people can also help keep your attitude upbeat. Finally, setting realistic goals and tracking your progress can help keep you motivated and focused on the positive. To sustain high self-motivation in the pursuit of tennis proficiency, it is vital to engender an internal locus of control, establish intrinsic motivation by focusing on personal growth and enjoyment, cultivate self-efficacy by setting achievable goals and celebrating successes, and practice mindfulness to maintain a positive and resilient mindset. By harnessing these psychological principles, learners can foster a sustainable drive to learn tennis and achieve their desired level of competency. Set high, realistic goals.[2] Deal effectively with people. Use positive self-talk is a vital cognitive strategy that can enhance performance and enhance overall well-being when learning tennis. Research suggests that using positive affirmations, such as 'I can do this' or 'I am improving with every practice,' can increase confidence, reduce anxiety, and promote a growth mindset. Positive mental imagery, also known as visualization, is another effective cognitive strategy to improve tennis performance. By

visualizing successful shots, serves, and rallies in their mind's eye, tennis learners can enhance their neural pathways, increase motor skills, and boost confidence.[3] To reap the benefits of mental imagery, learners should engage in detailed, vivid, and consistent visualizations, using all their senses to create a realistic and positive mental representation of their desired outcomes. We need to effectively manage anxiety and their emotions. We need to make strong emotions such as anxiety, excitement, anger, and disappointment a part of the exercise experience, realizing that a certain level of anxiety can help them improve their exercise experience. There is a performance pyramid layered different level mental training as follow in Figure 1.

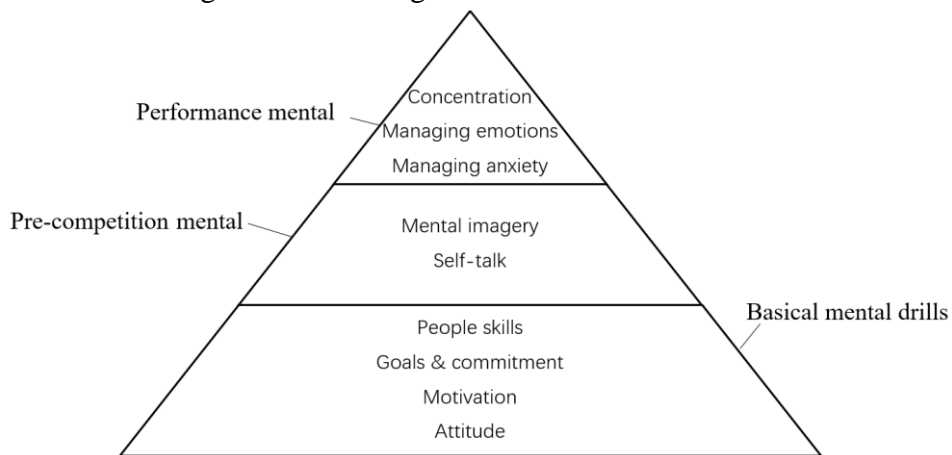


Figure 1: The Performance Pyramid

## 5. Experimental subjects and methods

### 5.1. Experimental subjects

Show in Table 1, a total of 126 first- and second-year students from regular undergraduate colleges and universities, who underwent routine tennis technique and physical training, were selected as the control group. For the experimental group, 132 students with similar backgrounds who received additional psychological training to assist with tennis technique and physical training were selected of the control group, 126 subjects (72 female and 54 male) were between 18 and 20 years old, with an average age of  $19.31 \pm 0.54$  years old. They regularly participated in physical exercise for 1-9 years, with an average of  $3.11 \pm 1.05$  years and had no physical education or related majors and had never played tennis before the lessons. The experimental group consisted of 132 subjects (79 female and 53 male) ranging in age from 18 to 20 years old, with an average age of  $19.23 \pm 0.51$  years old. They regularly participated in physical exercise for 1-10 years, with an average of  $3.84 \pm 1.42$  years and none of them had any sports-related majors or had ever played tennis before. The basic background difference between the two groups is not obvious, which is comparable. Before the systematic teaching began, the two groups of experimental subjects were respectively subjected to the simplified ITN tennis level test, which only tested the baseline hitting and serving parts. The baseline shot score was 60 points, and the serving score was 24 points, it was 84 points in total. The method is partner tosses ball by hands with the same side of the test participant. The test participant will hit 5 balls each in the forehand, backhand for down the line and cross court at the baseline, totaling 20 shots. 0 points will be scored when the ball goes out of bounds or hit on the net, 1 point will be scored when it falls into the shallow area, 2 points will be scored in the deep area except the target area, and 3 points will be scored in the target area. Scoring rules is as follows figure 2 and figure 3.

Table 1: Comparison of the scores of the two groups of experimental subjects before learning tennis

Groups	Number of people	Each score corresponds to the number and proportion (%)				Average scores
		Over 60 points	40-60 points	20-40 points	Under 20 points	
Control group	126	0	6(4.76)	38(30.16)	82(65.08)	17.68
Experimental group	132	0	5(3.79)	42(31.82)	85(64.39)	17.77

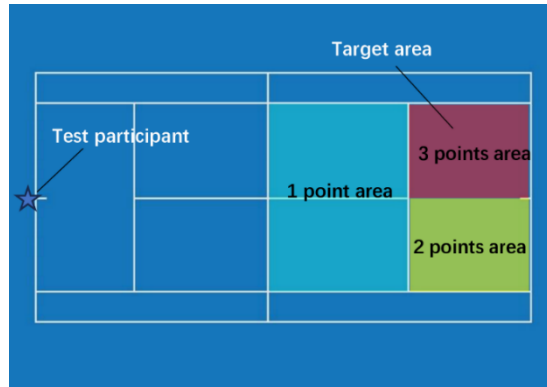


Figure 2: Baseline shot score formula

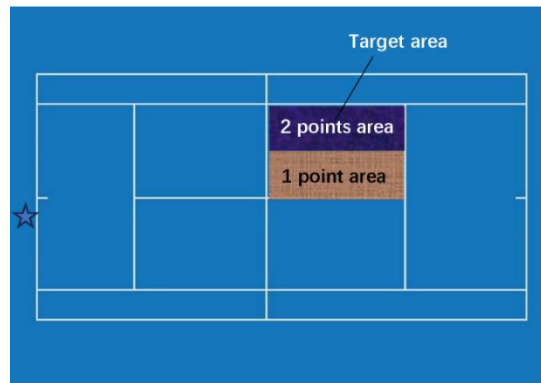


Figure 3: Serving score formula

## 5.2. Experimental method

Both experimental groups received tennis training once a week for 32 weeks, 1.5 hours per session. The control group received tennis skills, tactics, and special physical exercises, including baseline fore-and-backhand hitting techniques, serving, footwork, etc. The experimental group received targeted mental training in addition to basic tennis skills and physical training. This included 10 minutes of mental training before, during, and after each session. We also evaluated the learning experience of both experimental groups in the process of learning tennis. The evaluation included the degree of pleasure, fatigue, and physical recovery ability during the learning process. The evaluation was scored out of 100 points, with a score of 80-100 indicating great satisfaction, 60-79 indicating satisfaction, and under 60 indicating dissatisfaction. Gross satisfaction is calculated as the sum of very satisfied and satisfied scores.

## 6. Result

After 32 weeks of learning tennis, a simplified ITN test was carried out on both groups of subjects, and the results were as follows table 2 and table 3:

Table 2: Comparison of the scores of the two groups of experimental subjects after learning tennis

Groups	Number of people	The value & change value after the experiment	Each score corresponds to the number and proportion (%)				Average scores
			Over 60 points	40-60 points	20-40 points	Under 20 points	
Control group	126	After	31(24.60)	73(57.94)	22(17.46)	0	48.99
		Changing value	+31(+24.60)	+67 (+53.17)	-16(-12.70)	-82 (-65.08)	
Experimental group	132	After	41(31.06)	78(59.09)	13(9.85)	0	54.70
		Changing value	+41(+31.06)	+73 (+55.30)	-29(-21.97)	-85 (-64.39)	

Table 3: Comparison of tennis learning experience between two groups of subjects

Groups	Number of people	Degree of satisfaction			
		Great satisfaction	Satisfaction	dissatisfaction	Gross satisfaction
Control group	126	58(46.03)	55(43.65)	13(10.32)	113(89.68)
Experimental group	132	81(61.36)	48(36.36)	3(2.27)	129(97.72)

## 7. Discussion

College students are a psychologically sensitive group due to the pressure of study and life from peers, teachers, and parents. Additionally, the changing environment of high school and college inevitably creates a sense of gap, making them more prone to mental illness and related problems.[4]

Tennis is difficult to get started with and has a long learning cycle, which makes it challenging for college students to maintain continuous interest in the entire learning process. Improving the positive feedback of college students in learning tennis through psychological training has a positive effect on improving their performance and learning experience. The experimental results show that, after 32 weeks of tennis technique and physical training, the average score of the control group increased from 17.68 to 48.99, an increase of 177.09%. Meanwhile, after 32 weeks of mental training in addition, the average score of the experimental group increased from 17.77 to 54.70, an increase of 207.82%. In the questionnaire survey on satisfaction, the proportion of very satisfied and grossly satisfied respondents in the experimental group was higher than that in the control group.

In conclusion, proper mental training in the early stage of college students' tennis learning can not only help improve court performance but also enhance their learning experience throughout the process.

## References

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