

# Teaching Competence and Strategies of Table Tennis Teachers and their Impact on Students' Sports Performance: Basis for Enhanced Teaching Strategies Plan

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## ABSTRACT

This study assessed the teaching competence and strategies employed by table tennis teachers and their impact on students' sports performance. The data were gathered through questionnaires designed by the researcher. The data from teachers obtained through a questionnaire were analyzed statistically. The overall findings were used to propose an enhanced teaching competence plan for the sports performance of table tennis students. This quantitative study used correlational and analytical methods. The study used questionnaires to gather information from students and teachers, which will be analyzed statistically. Furthermore, the study included three main variables: the independent variables were teaching skills and strategies of instructors; while the dependent variable was the sports performance of students. These variables were examined for their relationships. This study ensured ethicality and proper research protocols through expert reviews and approval. It was conducted in Tianjin Chengjian University among a total of 100 students and 11 teachers. Based on the study findings, while communicative competence is the strongest teaching skill among table tennis teachers, overall neutral ratings emphasize the need for growth in creativity and innovation to better engage students and adapt to changing educational demands. Cooperative learning is preferred by both teachers and students over traditional lecture and theoretical learning. This shows how important it is to innovate and involve students in the learning process. Both teachers and students evaluated table tennis performance similarly, indicating a general neutral assessment and the need for improvement in all performance areas. Table tennis teachers need to enhance their use of theoretical instruction, incorporating practical application, to optimize sports performance and holistic development in students. Despite the provision of generic exercises, assessment indicates that table tennis students need specific stretches and exercises to enhance their mobility and flexibility.

**Keywords:** Agility and body control, cooperative learning, creativity and innovative skills, endurance and disciplined performance, communicative competence, lecture and theoretical learning, mobility and flexibility, flexibility and adaptability, practice and participative learning, sports performance, teaching skills, teaching strategies.

## INTRODUCTION

Table tennis is currently a world-famous sport, particularly in China where this is recognized as a national sport and popular recreational activity (Boucher & Pope, 2022). Historically, table tennis gained popularity during the founding of the People's Republic of China (PRC) in 1949 and the early 1960s. In relation to this, important figures to the sport, such as Ivor Montagu, the head of the International Table Tennis Federation (ITTF) during that time, encouraged the allocation of resources to successfully establish this sport in China (Boucher & Pope, 2022). Table tennis further became ingrained in Chinese sports culture and society when Rong Guotuan won the World Table Tennis Championship in 1959, representing a turning moment for table tennis in Chinese history (Boucher & Pope, 2022). With understanding these, it can be seen that table tennis has already had a long history in China and this is also related to key political and social events, highlighting the significance of this sport.

There are multiple reasons for the popularity of table tennis, such as for health, socialization, and technology. First, table tennis is seen as an effective sport in improving the health of schoolchildren. Baidiuk et al., (2019) found that children who participated in this sport had increased lung capacity and as well as improved complex choice reaction, short-term memory capacity, and volume of processed information. In China, the gross motor skills of preschoolers were also seen to improve through partaking in table tennis activities (Gu et al., 2021). This was particularly helpful for enhancing the object control skills of children. These findings then show that table tennis can be beneficial for both physical and cognitive development in students, making it a suitable sport for maintaining optimal health.

Moreover, table tennis is also seen for its significance for socialization, where performance indicators were seen to be greatly linked to popularity in terms of individual achievements (Ma et al., 2019). Social popularity models can be seen as a good measurement when analyzing the reputation and status of table tennis players in society (Ma et al., 2019).

In China, table tennis was also seen to boost the development of Shanghai through combining culture and history (Zhang & Gu, 2021). Urban development was seen to be a supplementary benefit to supporting table tennis through tournaments, events, government relations, and technical innovations (Zhang & Gu, 2021).

Lastly, table tennis has also been widely innovated with its growing popularity. The use of artificial intelligence is seen to be effective in teaching and training players, which improves learning ability by up to 20% (Cui & Zhou, 2022). Other technologies that are used in teaching table tennis include Internet of Things (IoT), data analytics, wearable devices, and virtual and augmented reality (Zhang & Breedlove).

As the sport has high significance in Chinese society, the training and pedagogy of table tennis is also given much attention to optimize teaching and learning outcomes. For instance, Zeng (2023) found that table tennis athletes would need to combine both aerobic and anaerobic exercises to their training as an effective method to increase the physical quality of players. This is particularly important in a time with constantly changing demands and technologies related to the physical fitness of athletes. Other studies have also looked into the use of multiple balls for long-term training as an improved methodology for improving the performance of athletes (Mocrousov-Cuciuc & Grosul, 2019). Furthermore, creating training plans is ever more significant as these can help create specialized programs that cater to the needs of athletes. For instance, Pradas et al., (2021), found that there are existing gender differences with regards to the physiology, metabolism, structure, and performance time of players. Such information then leads to the need to devise and design training

programs that are particular to the individual and unique needs of players, such as those relating to their gender.

There are also some circumstances that are tied to the practice and popularity of table tennis in China. These all intertwine with history, society, health, and culture, to which represent a vast part of Chinese life. Despite the extensive history and significant cultural impact of table tennis in China, as well as its documented benefits for physical health, cognitive development, socialization, and urban development, there is a notable gap in the literature concerning the specific teaching skills and strategies employed by table tennis coaches and their direct impact on students' sports performance. Most existing studies have primarily focused on the general benefits of the sport, technological advancements in training, and the physiological and gender differences in athletes. However, comprehensive investigations into how pedagogical approaches affect learning outcomes in table tennis remain underexplored. While studies have touched on training methodologies such as aerobic vs. anaerobic exercises and multi-ball training, there is limited empirical research on the pedagogical techniques specific to table tennis coaches and their effectiveness in enhancing student performance. Additionally, the relationship between teaching strategies and demographic factors such as age, gender, and skill level of students has not been thoroughly examined.

Therefore, there is a need to continuously enhance and update the training and pedagogy of table tennis to meet both current and future demands for players. The gaps relate to the evolving nature of sports training and the increasing integration of technology and personalized training programs. Addressing this gap would provide valuable insights for developing optimized training frameworks that cater to diverse student needs and enhance overall performance. This then further leads to the significance of this study and its appropriateness for contributing to insights for teaching table tennis. More specifically, the study examined the teaching skills and strategies employed by table tennis teachers and their impact on students' sports performance. The main variables of the study namely teaching skills, teaching strategies, and sports performance were investigated and their relationship with demographic factors of students was examined. The output the study, an enhanced teaching strategies plan, was derived from the best practices, to further improve the overall performance of table tennis players at various levels. Thus, the study are beneficial to coaches, players, and educational institutions by providing a structured approach to training and skill development.

## **STATEMENT OF THE PROBLEM**

This study intends to assess the teaching competence and strategies employed by table tennis teachers and their impact on students' sports performance. More specifically, the study aims to answer the following research questions:

1. What is the level of teaching competence of table tennis teachers, in terms of:
  - 2.1. Communicative Competence,
  - 2.2. Creativity and Innovation
  - 2.3. Flexibility and Adaptability?
2. What is the level of teaching strategies of table tennis teachers, in terms of?
  - 4.1. Cooperative Teaching Method
  - 4.2. Practice and Participation Method

#### 4.3. Lecture Method

3. What are the students' sports performance level, in terms of:

6.1. Agility and Body Control,

6.2. Mobility and Flexibility, and

6.3. Endurance and Disciplined Performance?

4. Does teaching competence and strategies in table tennis have a significant impact on students' sports performance?

5. What enhanced teaching strategies plan can be proposed to improve the sports performance of table tennis students?

### CONCLUSIONS

Based on the findings of the study, the following conclusions are presented:

1. While communicative competence is the strongest teaching skill among table tennis teachers, overall neutral ratings emphasize the need for growth in creativity and innovation to better engage students and adapt to changing educational demands.
2. Cooperative learning is preferred by both teachers and students over traditional lecture and theoretical learning. This shows how important it is to innovate and involve students in the learning process.
3. Both teachers and students evaluated table tennis performance similarly, indicating a general neutral assessment and the need for improvement in all performance areas.
4. Table tennis teachers need to enhance their use of theoretical instruction, incorporating practical application, to optimize sports performance and holistic development in students.
5. Despite the provision of generic exercises, assessment indicates that table tennis students need specific stretches and exercises to enhance their mobility and flexibility.

### RECOMMENDATIONS

Based on the conclusions of the study, the following recommendations are presented:

1. Enhance the creativity and innovation of the table tennis teachers by implementing professional development programs, including workshops on creative teaching methods, technology use, and student engagement strategies, thereby enhancing the educational experience.
2. Enhance the effectiveness of instruction by encouraging cooperative learning, experimenting with different approaches, offering continual professional development, and scheduling frequent student feedback sessions.
3. Provide focused professional development and cooperative learning opportunities for table tennis instructors to improve their methods, encourage introspection, change up their approaches, and consider feedback from students in order to make ongoing progress.
4. Improve theoretical instruction in table tennis teaching, a blended approach combining theory with practical application is recommended, utilizing various strategies to bridge the gap between theory and practice.

5. Improve flexibility and mobility of the table tennis teachers by including specific stretches and exercises that consist of dynamic stretching, joint mobility, and drills tailored to a particular sport. A consistent training plan may enhance general mobility, athletic development, and performance.

**ENHANCED TEACHING COMPETENCY PLAN IN TABLE TENNIS**

Key Result	Key Performance Indicator	Targets	Strategic Initiatives	Activities	Target Date of Completion	Budget/ Resources	Expected Outcome
Table Tennis Walkthrough: Open Forum for Immediate Solutions	To provide an open communication between table tennis teachers and students to an existing concern related to table tennis.	Table Tennis programs and Activities involving Teachers and students	Table Tennis teachers Chinese Sports Institutions Compliance with Table Tennis requirements	Appoint skilled moderators to ensure the effectiveness of the discussions and establish respect among others Develop action plans based on the outcome of the open forum	S.Y. 2024-2025	Institutional/Departmental Budget	Action plan to address issues, concerns and solutions
Technologically Competent Teacher: Enhancing Table Tennis Instruction with Technology	To improve the teaching strategies of table tennis teachers in technology and innovation	Table Tennis Teachers	Table Tennis teachers Sports Commission in China	Organize seminars on using technology into coaching (employing apps for skill tracking,	S.Y. 2024-2025	Institutional/Departmental Budget	Programs that certify a table tennis teacher's proficiency in using

				video analysis tools, and virtual reality to create immersive training environments) Arrange panels of experts to talk about upcoming developments in sports technology and how table tennis teaching might benefit from them.			cutting-edge techniques and technology into their coaching style.
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