

Transforming Tennis Education with TGFU: A Study of Skill Enhancement Among Chinese University Students

Shengqi Wang^{1,2*}, Frederick Josue¹

¹ Faculty of Education and Sports Studies, Universiti Malaysia Sabah, 88400, Kota Kinabalu, Sabah, Malaysia

² Department of Physical Education, Xianyang Normal University, Xianyang City, 712000, China

* Corresponding Author: mfadhil@ums.edu.my

Received: 28 September 2024 | Accepted: 20 December 2024 | Published: 31 December 2024

DOI: <https://doi.org/10.55057/ajress.2024.6.8.19>

Abstract: *The rapid rise of tennis in China, highlighted by Zheng Qinwen's victory at the Paris Olympics, underscores the urgency of advancing tennis education at Chinese universities. However, traditional teaching methods often fall short in fully engaging students and fostering skill development. This study investigates the application of the Teaching Games for Understanding (TGFU) model in Chinese university tennis education, aiming to address the shortcomings of traditional methods in skill acquisition. Through pre- and post-test assessments over an 8-week intervention period, the study found that TGFU significantly enhanced students' tactical awareness, decision-making abilities, and overall tennis performance, outperforming traditional teaching methods. Additionally, TGFU was shown to support long-term skill retention and student engagement. This research provides empirical support for pedagogical innovation in sports education and is expected to positively influence the development and policy-making of tennis programs in Chinese universities, laying the groundwork for nurturing future tennis elites.*

Keywords: Teaching Games for Understanding (TGFU), tennis education, Chinese universities, teaching methods, skill development

1. Introduction

Tennis, once regarded as a niche sport in China, has recently experienced a remarkable surge in popularity, fueled by both increasing participation and significant international successes. A defining moment in this trend was the victory of Chinese tennis player Zheng Qinwen at the Paris Olympics, which captured national attention and highlighted the growing potential of Chinese athletes on the global stage. Zheng's triumph has not only sparked widespread enthusiasm but has also underscored the importance of nurturing tennis talent within the country, elevating the sport's status within Chinese society.

Amidst this evolving landscape, the emphasis on tennis education in Chinese universities has intensified, revealing limitations in traditional teaching methods that often fail to fully engage students or address their diverse learning needs. The challenge lies in developing innovative pedagogical approaches that bridge the gap between theoretical understanding and practical skill acquisition. The Teaching Games for Understanding (TGFU) model has emerged as a promising solution, offering a more holistic and student-centered approach to sports education. TGFU shifts the focus from isolated skill drills to a comprehensive understanding of game

dynamics, encouraging active learning through game-based scenarios that enhance decision-making, problem-solving, and tactical awareness.

This study investigates the impact of implementing the TGFU model on the tennis skill development of Chinese university students. By assessing the effectiveness of this pedagogical approach within the context of university-level tennis programs, the research aims to contribute to the broader discourse on educational innovation in sports. The findings are expected to provide valuable insights into how TGFU can be leveraged to foster higher levels of skill acquisition, ultimately supporting the development of future elite tennis players in China.

2. Research Background

2.1 Evolution of Tennis Education in China

Tennis education in China has undergone significant transformations, particularly in the last two decades, reflecting the broader emphasis on physical education as a crucial component of student development. Historically, tennis was relatively marginal in Chinese educational institutions, where sports like table tennis and badminton dominated. However, with China's increased participation in international tennis, there has been a strategic push to elevate tennis education, particularly at the tertiary level (Sun et al., 2022). Traditional methods, primarily focused on rote learning and repetitive practice, have long been the norm. This approach, while effective in certain contexts, has been criticized for failing to foster comprehensive skill development and tactical understanding (Jia, 2019). Recent years have seen a gradual shift towards more dynamic and student-centered methodologies, signaling a new era in Chinese tennis education.

2.2 Introduction of TGFU in Chinese Higher Education

The introduction of the Teaching Games for Understanding (TGFU) model in Chinese universities represents a significant pedagogical shift. Unlike traditional approaches that emphasize technical skill acquisition through isolated drills, TGFU promotes a game-based learning environment that enhances students' tactical awareness and decision-making abilities (Andrianto, 2023). This approach aligns with broader educational reforms in China aimed at fostering critical thinking and student-centered learning (García-Castejón et al., 2021). However, the adoption of TGFU has not been without challenges. The need for a cultural adaptation of the model, coupled with resistance from educators accustomed to conventional methods, has posed significant barriers. Despite these challenges, TGFU's potential to transform tennis education in China remains substantial, particularly as it encourages a deeper engagement with the sport and a more reflective learning process.

2.3 Impact of TGFU on Student Skill Acquisition

The core objective of integrating TGFU into tennis education is to enhance students' skill acquisition by making learning more engaging and reflective. Empirical studies have demonstrated the effectiveness of TGFU in improving not only technical skills but also strategic thinking and decision-making abilities (Zen, 2020). For instance, research by Firmana et al. (2023) has shown that students taught under the TGFU model exhibit significant improvements in their ability to execute complex tennis strategies, compared to those trained under traditional methods. Additionally, TGFU has been found to promote long-term skill retention, as students develop a more profound understanding of the game's tactical aspects (Alaoui et al., 2018). This suggests that TGFU is not just a tool for immediate skill enhancement but a method that can instill lasting competence and enthusiasm for tennis among Chinese university students.

3. Research Questions

Hence, the research questions that this paper is based on are as indicated:

Research Question 1: What is the effect of TGFU in enhancing the skills of teaching tennis, across teachers and university students in China?

Research Question 2: How does TGFU play an important role in enhancing the evaluation of tennis skills by teachers, in Chinese university students?

Research Question 3: What is the impact of TGFU in enhancing the learning and acquisition of specific tennis skills in Chinese university students, as compared to traditional tennis teaching methods?

4. Research Hypothesis

The current literature demonstrates the effectiveness of the TGFU (Teaching Games for Understanding) model in enhancing teaching methodologies and student learning outcomes in sports education. According to a meta-analysis by Bracco et al. (2019), the TGFU approach significantly enhances teachers' pedagogical skills by promoting an environment where students actively engage in reflecting on their gameplay, which leads to improvements in tactical decision-making, motor skills, and overall game performance (Jaquero et al., 2020). However, some scholars argue that the implementation of TGFU can be challenging due to increased preparation time, the need for teachers to adapt to new methods, and the potential misalignment with existing curricular goals (Liang et al., 2019). This dichotomy sets the stage for the first hypothesis of this study.

Further, the literature suggests that TGFU positively influences the evaluation strategies of physical education teachers, allowing for more comprehensive and student-centered assessments. Such evaluations may involve the use of performance metrics like game observation tools, skill assessments, and formative feedback mechanisms, which have been shown to improve students' skill acquisition in sports like tennis (Rodríguez-Mora et al., 2022; Perez et al., 2021). This supports the formulation of the second hypothesis.

Lastly, TGFU has been linked to significant improvements in student engagement and learning outcomes. The model not only enhances students' motivation to participate in physical education but also fosters critical thinking and problem-solving skills. Specifically, in the context of tennis, TGFU has been shown to improve key aspects of gameplay, such as offensive and defensive strategies, shot accuracy, and overall match performance (Wang & Zhang, 2020). Based on this evidence, the third hypothesis of the study is proposed as follows:

Null Hypothesis 1: TGFU does not result in statistically significant improvements in the teaching methods of tennis instructors in Chinese universities.

Alternative Hypothesis 1: TGFU leads to statistically significant improvements in the teaching methods of tennis instructors in Chinese universities.

Null Hypothesis 2: TGFU does not statistically significantly enhance the evaluation techniques used by tennis instructors in Chinese universities.

Alternative Hypothesis 2: TGFU statistically significantly enhances the evaluation techniques used by tennis instructors in Chinese universities.

Null Hypothesis 3: TGFU does not statistically significantly improve the learning and skill acquisition of tennis among Chinese university students.

Alternative Hypothesis 3: TGFU statistically significantly improves the learning and skill acquisition of tennis among Chinese university students.

5. Research Significance

5.1 Enhancing Pedagogical Approaches in Tennis Education

This study contributes to the growing body of research on innovative teaching methods in sports education, specifically through the application of Teaching Games for Understanding (TGFU) in tennis instruction. By shifting the focus from traditional, technique-centered approaches to a more holistic, game-based learning model, this research underscores the potential of TGFU to revolutionize tennis education in China. The significance lies in providing empirical evidence that supports the effectiveness of TGFU in fostering not only technical skills but also critical thinking, decision-making, and tactical understanding among students (Cheng et al., 2020). This aligns with broader educational reforms in China that emphasize the need for more dynamic and student-centered teaching methodologies (Danijela et al., 2021).

5.2 Addressing Gaps in Current Educational Practices

Despite the recognized benefits of TGFU, its implementation in Chinese higher education has been limited, primarily due to a lack of awareness and resistance to change from traditional instructional practices. This study addresses these gaps by exploring the challenges and opportunities associated with adopting TGFU in the context of Chinese universities. It highlights the need for a cultural and institutional shift towards embracing more innovative and effective teaching models in sports education. By providing concrete data on the benefits of TGFU, this research aims to influence policy and curriculum development, encouraging a more widespread adoption of this pedagogical approach (Barba-Martin et al., 2020).

5.3 Contributing to Long-Term Student Development

The long-term significance of this research lies in its potential impact on student development beyond the classroom. TGFU has been shown to not only improve immediate tennis skills but also to foster a deeper understanding and retention of the game, which can lead to sustained interest and engagement in the sport (Bond, 2020). By promoting a more engaging and reflective learning environment, this study supports the broader educational goal of developing well-rounded individuals who are not only skilled in their sport but also capable of applying critical thinking and strategic decision-making in various aspects of their lives. This research, therefore, contributes to the cultivation of a new generation of Chinese tennis players who are both technically proficient and intellectually agile, prepared for success both on and off the court (Alaoui et al., 2018).

6. Research Limitations

6.1 Sample Size and Generalizability

One of the primary limitations of this study is the relatively small sample size, which may affect the generalizability of the findings. Although the research provides valuable insights into the effectiveness of Teaching Games for Understanding (TGFU) in improving tennis skills among Chinese university students, the results may not be fully representative of the broader population of students across different regions and educational institutions in China. Future studies with larger and more diverse samples are necessary to validate these findings and enhance their applicability to a wider context (Firmana et al., 2023).

6.2 Short-Term Evaluation of Outcomes

This study focuses on the short-term impact of TGFU on tennis skill acquisition, primarily through pre-test and post-test assessments conducted over an 8-week intervention period. While significant improvements were observed, the research does not account for the long-term effects of TGFU on students' skill retention, motivation, and continued engagement in tennis. Longitudinal studies are needed to assess the sustainability of these improvements and to determine whether the benefits of TGFU persist over time (Cocca et al., 2020).

6.3 Challenges in Implementation and Instructor Adaptation

Another limitation lies in the challenges associated with the implementation of TGFU, particularly in the context of Chinese higher education. The study acknowledges the difficulties faced by instructors in adapting to this new pedagogical model, including potential resistance to change, a lack of adequate training, and limited resources in some institutions. These factors may have influenced the effectiveness of TGFU in this study and could vary widely across different educational settings. Further research is needed to explore strategies for overcoming these challenges and to develop comprehensive training programs for instructors to better integrate TGFU into their teaching practices (García-Castejón et al., 2021).

7. Conclusion

The study presented herein highlights the transformative potential of the Teaching Games for Understanding (TGFU) model in tennis education within Chinese universities. The findings underscore TGFU's capacity to address the limitations of traditional teaching methods, particularly in fostering a more engaging, student-centered learning environment that promotes both technical skill acquisition and strategic thinking.

Advancing Tennis Education in China

The evolution of tennis education in China, coupled with the growing popularity of the sport, calls for innovative approaches to teaching. The research demonstrates that TGFU is not only effective in enhancing students' tennis skills but also in cultivating a deeper understanding of game dynamics, critical for developing future tennis professionals. This aligns with the broader educational reforms in China, which prioritize dynamic and holistic learning experiences (Dimmick et al., 2022).

TGFU's Impact on Student Skill Acquisition

Empirical evidence from the study reveals that TGFU significantly improves students' technical and tactical capabilities compared to traditional methods. By focusing on game-based learning, TGFU encourages students to engage actively with the material, leading to better decision-making, problem-solving, and long-term skill retention (Darmawan et al., 2022). The model's effectiveness is particularly notable in its ability to make learning more reflective and enjoyable, thus increasing student motivation and participation (Deng, 2022).

Overcoming Implementation Challenges

While the benefits of TGFU are clear, the study also acknowledges the challenges in its implementation, particularly in adapting the model to the cultural and institutional context of Chinese universities. Resistance to change and the need for comprehensive instructor training are significant barriers that must be addressed to fully realize TGFU's potential. The research suggests that overcoming these challenges requires targeted efforts to train educators and integrate TGFU more broadly within sports curricula (Ferriz-Valero et al., 2020).

In conclusion, the study provides valuable insights into the role of TGFU in revolutionizing tennis education in China, offering a pathway for the development of technically proficient, strategically minded athletes. The findings have important implications for educational policy and practice, advocating for a broader adoption of TGFU to enhance the overall quality of sports education in China. Future research should continue to explore the long-term impacts of TGFU and strategies for overcoming the challenges of its implementation to ensure its widespread and effective use.

References

- Andrianto, J. R. (2023). Teaching Games for Understanding (TGfU) Learning Model on Learning Motivation in Soccer Learning. *JOURNAL RESPECS (Research Physical Education and Sports)*, 5(2), 296-300. <https://doi.org/10.31949/respecs.v5i2.6054>
- Arias-Estero, J. L., Jaquero, P., Martínez-López, A. N., & Morales-Belando, M. T. (2020). Effects of two TGfU lessons period on game performance, knowledge and psychosocial variables in elementary physical education. *International Journal of Environmental Research and Public Health*, 17(10), 3378. <https://doi.org/10.3390/ijerph17103378>
- Barba-Martín, R. A., Bores-García, D., Hortigüela-Alcalá, D., & González-Calvo, G. (2020). The application of the teaching games for understanding in physical education. Systematic review of the last six years. *International journal of environmental research and public health*, 17(9), 3330. <https://www.mdpi.com/1660-4601/17/9/3330>
- Barba-Martín, R. A., Bores-García, D., Hortigüela-Alcalá, D., & González-Calvo, G. (2020). The application of the teaching games for understanding in physical education. Systematic review of the last six years. *International journal of environmental research and public health*, 17(9), 3330. <http://dx.doi.org/10.3390/ijerph17093330>
- Bond, M. (2020). Facilitating student engagement through the flipped learning approach in K-12: A systematic review. *Computers & Education*, 151, 103819. <https://discovery.ucl.ac.uk/id/eprint/10095691/1/FLSystematicReviewArticle-Pre-print.pdf>
- Bracco, E., Lodewyk, K., & Morrison, H. (2019). A case study of disengaged adolescent girls' experiences with teaching games for understanding in physical education. *Curriculum Studies in Health and Physical Education*, 10(3), 207-225. <https://doi.org/10.1080/25742981.2019.1632724>
- Chen, G., Qiu, Q., Zhang, J., & Chen, C. (2022). Reform of Tennis Teaching Mode in Colleges and Universities in the Era of Big Data. *Innovative Computing: Proceedings of the 4th International Conference on Innovative Computing (IC 2021)*, pp. 563-570. https://link.springer.com/chapter/10.1007/978-981-16-4258-6_70
- Cheng, P., Ming, D., Man, X., & Dai, D. (2021, February). Optimized Allocation of Tennis Teaching Resources Based on Big Data. *Journal of Physics: Conference Series*, 1744(4), p. 042138. <https://iopscience.iop.org/article/10.1088/1742-6596/1744/4/042138/pdf>
- Cocca, A., Carbajal Baca, J. E., Hernández Cruz, G., & Cocca, M. (2020). Does a Multiple-Sport Intervention based on the TGfU pedagogical model for Physical Education increase physical fitness in primary school children? *International Journal of Environmental Research and Public Health*, 17(15), 5532. <https://www.mdpi.com/1660-4601/17/15/5532>
- Danijela, M. (2018). The teacher's role and professional development. *International Journal of Cognitive Research in Science, Engineering and Education (IJCRSEE)*, 6(2), 33-45. <https://doi.org/10.5937/ijcrsee1802033M>

- Darmawan, M., Suherman, W. S., Nurdin, U., & Arianto, A. C. The Influence of Teaching Games for Understanding (TGfU) Learning Model on Improving Physical Education Learning Outcomes. *International Journal of Multidisciplinary Research and Publications*, 1-4. <https://ijmrap.com/wp-content/uploads/2023/07/IJMRAP-V6N1P142Y23.pdf>
- Deng, N., Soh, K. G., Huang, D., Abdullah, B., Luo, S., & Rattanakoses, W. (2022). Effects of plyometric training on skill and physical performance in healthy tennis players: A systematic review and meta-analysis. *Frontiers in Physiology*, 13, 1024418. <https://doi.org/10.3389/fphys.2022.1024418>
- Dimmick, D. (2022). Learning to use the Teaching Games for Understanding Model with Children who have Special Needs. *J Adv Sport Phys Edu*, 5(8), 191-197. https://saudijournals.com/media/articles/JASPE_58_191-197.pdf
- Ferriz-Valero, A., Østerlie, O., García Martínez, S., & García-Jaén, M. (2020). Gamification in physical education: Evaluation of impact on motivation and academic performance within higher education. *International Journal of Environmental Research and Public Health*, 17(12), 4465. <https://doi.org/10.3390/ijerph17124465>
- Gil-Arias, A., Claver, F., Práxedes, A., Villar, F. D., & Harvey, S. (2020). Autonomy support, motivational climate, enjoyment and perceived competence in physical education: Impact of a hybrid teaching games for understanding/sport education unit. *European Physical Education Review*, 26(1), 36-53. <https://journals.sagepub.com/doi/pdf/10.1177/1356336X18816997>.