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Research on the Current State of Pickleball Teaching in Chinese Universities

Zhou Bingbing[1*], Lubna Ali Mohammed[2]

[1&2] School of Education, Lincoln University College, Malaysia

***Corresponding author:** zhoujp.phdscholar@lincoln.edu.my*

Abstract

Pickleball has been increasingly popular in China with its cost-effectiveness and accessibility. The training-oriented framework of pickleball sport remains in its infancy. The authority of Chinese universities encountered difficulties related to curriculum design and institutional support despite their increasing significance in university physical education programmes. Therefore, this study aimed to analyse the function of the current state of pickleball teaching on outcomes of pickleball teaching in Chinese universities. A quantitative and cross-sectional research methodology was applied to collect data from 500 undergraduate students from Chinese universities. This study implemented purposive sampling and descriptive analysis to evaluate basic data. The relationship between pickleball teaching and the outcomes of this teaching process was examined by Analysis of Variance (ANOVA). The findings indicated that advanced and well-coordinated pickleball teaching methods significantly enhanced students' engagement and skill development to improve their physical health of students. Therefore, the study emphasised that the pickleball sports potentially be evaluated for the physical education curriculum, even if it was in its early stages. In conclusion, the research indicated that pickleball encourages students to keep up a healthy lifestyle and increase their sense of community involvement in Chinese universities.

Keywords: Educational Outcomes, Funding, Infrastructure, Pickleball, Teaching Methods

Introduction

Pickleball, a new paddle sport, blends components of table tennis and badminton. Pickleball has quickly grown in popularity in China with government initiatives to support physical fitness and healthy lives. Beginners and students have found this sport particularly intriguing due to its accessibility, safety, and emphasis on social interaction. Pickleball has progressed throughout the nation because of the expanding impact of digital media, which has raised awareness of lesser-known sports. Pickleball has the potential to become a significant part of physical education in academic institutions with the rise of training facilities. People have gradually learned about a variety of new ball sports through newspapers and other media due to the expansion of internet media in recent years (Apriyanti & Gusdernawati, 2023). A study by Stroesser et al. (2024) revealed that Taiwanese people are still unfamiliar with the pickleball game, despite this game being promoted and increasing its visibility in Taiwan through the expansion of internet-based communication. Pickleball has been included in formal education in China, which has presented institutional and pedagogical problems. Despite the sport's social and engaging

aspects drawing attention of many students, the educational framework of this sport remains inadequate, and requires improved management as well as long-term planning. However, the lack of organised curricula and suitable teaching materials continues to limit pickleball education's advancement at the university level (Stroesser et al., 2024). On the other hand, pickleball is a relatively new activity with fewer players than other popular sports. Some students want to participate in the pickleball sport to revitalise the pickleball community. The positive perceptions or emotions students get from engaging in leisure activities are referred to as leisure satisfaction. This refers to how satisfied people are with their overall leisure experience and context, which is derived from the fulfilment of their perceived or unperceived needs.

The sport's inclusive and inspiring qualities continue to increase student involvement, but its efficacy is constrained by a disorganised teaching structure. Research by Wang et al. (2023) emphasised that pickleball is currently being promoted through optional classes and campus organisations as part of larger physical education changes and national fitness goals. Many games are played on modified tennis or badminton courts rather than special facilities because infrastructure is still in its infancy. The pickleball sport is ideal for academic environments because of its easy adaptability and compatibility for players of all skill levels. The growth of pickleball sport is also being aided by structured development strategies and growing institutional support, such as efforts to formalise competitions and bolster its presence in higher education (Wang et al., 2023). Players of the pickleball sport have derived satisfaction from the sport's social, psychological, and physical advantages despite pickleball's low field constraints and ease of play. Research by Li (2025) demonstrated that the concept of well-being is complex and includes both cognitive and emotional elements. Pickleball players experience a variety of subjective personal sentiments that influence their emotions or outlook on life. Therefore, the event planners use appropriate strategies to promote pickleball participation among the university students of China. For instance, the venue may offer equipment introduction and sales services to increase student access to appropriate equipment. Additionally, a unique fan page can be created by the organiser to disseminate information about the event and educational materials, or it can simply serve as a forum for pickleball friends to interact (Li, 2025). These policies and initiatives could guarantee that everyone who wants to play pickleball has the chance to do so, to enhance their leisure time and overall well-being.

Review of Related Literature

People have gradually heard about a variety of new ball sports through newspapers and other media due to the growth of online media in recent years. In the period of the internet's growth, Chinese students are still unfamiliar with pickleball, which has been gradually pushed in China. According to an assessment of pertinent research, pickleball primarily addressed the problem of senior pickleball participation. Prior research by Wang et al. (2023) indicated that most pickleball teaching methods in Chinese universities applied interactive and curriculum-based methods. These procedures have been shown to support students in acquiring new skills and increasing their involvement in the athletics of universities. Additionally, the study has shown that pickleball employment and engagement greatly enhance students' psychological health and quality of life. This academic procedure strongly highlighted gradual skill growth, the combination of theoretical and practical knowledge, and active participation among students. Their study helped Chinese universities implement competency development and student motivation-oriented teaching strategies. Research also demonstrated the positive results of these instructional strategies (Wang et al., 2023). Conversely, research

by Terrell and Ficquette (2023) on pickleball training methods emphasised the importance of including agility exercises with game-like situations. The researchers underlined that pickleball requires moderate endurance and fast side-to-side motions. Additionally, they determined that pickleball is a crucial sport for creating movement-specific training as opposed to only adhering to conventional fitness routines. The study also evaluated the importance of implementing injury prevention techniques (Terrell & Ficquette, 2023).

The previous research on pickleball infrastructure at universities revealed that the growth of pickleball sports has encouraged universities to build flexible, expandable buildings. The research found that pickleball does not need a lot of infrastructure, such as large courts or permanent netting. This indicated that institutions do not require a lot of financial help to modify already-existing facilities, such as outdoor pickleball courts and badminton courts. Additionally, according to this study, the pickleball courts are inexpensive and very sturdy (Apriyanti & Gusdernawati, 2023). However, research by Lauxtermann and Stubbs (2025) indicated the benefits of universities from well-structured infrastructure and the demands of pickleball sports. The research emphasised the better requirements of financial support for resources and more efficient collaboration in Chinese universities to enhance the development and implementation of pickleball sport. The study also demonstrated that official funding for pickleball sports in China is often determined by the number of players and facilities provided (Lauxtermann & Stubbs, 2025).

According to Social Learning Theory, people pick up new behaviours and viewpoints by seeing and copying the activities of others in social situations. Additionally, the theory emphasised that reinforcement and feedback significantly affected the key roles of methods such as motivation, reproduction, and attention (Bandura & Walters, 1977). According to recent research, sports education methods at Chinese universities raise students' motivation and behavioural engagement to the level of teacher-centred approaches. Peer relationships and instructor assistance raise involvement and self-efficacy. These findings are consistent with the Social Learning Theory, which holds that students increase their knowledge through social interaction, imitation, and observation (Liu et al., 2024). Henceforth, Social Learning Theory delivered a relevant theoretical basis to comprehend the connection between the current state of pickleball teaching and the outcomes of pickleball teaching in Chinese universities, as social interaction and peer support influence the interest and participation of students.

Objectives

To identify the impact of the current state of pickleball teaching on outcomes of pickleball teaching in Chinese universities.

Methodology

Research Design and Procedure

A quantitative and cross-sectional research design was employed in the current study to examine the role of the current state of the pickleball teaching approach on the outcomes of pickleball teaching in Chinese universities. The design was enabled to gather data from undergraduate students at Chinese universities who were enrolled in pickleball sports at a certain time. A structured questionnaire was circulated to the suitable respondents through online as well as offline channels to accomplish the data collection process. The survey instrument was developed using the selected variables in this study. A pilot test was used

to ensure the validity of the data, while Cronbach's Alpha was applied to ensure the proper reliability. Furthermore, the administration of the questionnaire to the chosen sample helped to determine the measurable relationship between the current state of pickleball teaching and the outcomes of pickleball teaching. The confidence interval is 95%, which utilises the direction and size of the statistical link. A p-value < 0.05 was set for statistical significance. The researcher also applied descriptive analysis to determine the key elements of this study.

Operational Framework

Subjects or Data Sources

A survey was conducted to gather primary data for this analysis of the study. Students from Chinese universities provided the collected data for this study. The survey was split into two sections: (a) the personal information of the respondents and (b) a 5-point Likert scale with enquiries about the impact of pickleball teaching on Chinese universities.

Instrumentation and Data Analysis

The purposive sampling was utilised to select valid and reliable study participants in this research context. The Rao Soft tool suggested 459 study participants for the data collection of the study. Therefore, 650 survey questions were provided to the respondents. Researchers received 610 questionnaires; 110 were rejected because of unwanted and unprofessional information. Consequently, the final sample size was 500. Microsoft Excel, along with SPSS 25 were used for statistical analysis of the study. The researcher applied a descriptive analysis technique to comprehend the important elements of the collected data, further employing the ANOVA to evaluate the relationship between research variables.

Limitations

The research study faced several limitations inherent in quantitative research. The use of closed-ended survey questions limited the capacity of participants to provide in-depth information, which made it more difficult to understand complex viewpoints or contextual elements. This limitation also affected their assessments of the state of pickleball instruction in Chinese universities. The impact of pickleball instruction in Chinese colleges was oversimplified by quantitative data. Moreover, the findings of the research topics were represented, as collecting data solely from Chinese universities led to issues related to the limited broader applicability of this study to other educational contexts. The cross-sectional design restricted the study's ability to demonstrate causality because the data would capture relationships at a single point in time. Finally, the results could not be entirely generalisable outside of the sampled community, as the collected data will be influenced by the demographics and interest in pickleball of the respondents.

Analysis

Factor Analysis

The factor analysis (FA) goal is to find hidden patterns in otherwise available data. The goal of the simulation is to identify infractions and possible relationships that are apparent to the

unaided eye. The "Kaiser-Meyer-Olkin (KMO) Test" is used to calculate sampling adequacy to define an appropriate value for FA. It has been demonstrated that the mathematical model and related variables used for sampling produce accurate results. The data may contain duplicates. The information is more visible with lower values. KMO assigns the investigator a number between 0 and 1 in this study. The sample population was accepted with a KMO value between 0.8 and 1.
Kaiser indicated that the following standards have been considered appropriate parameters:
Kaiser needs to fulfil the following certification prerequisites:
Middle grades normally range between 0.70 to 0.79; a pitiful range is 0.050 to 0.059; far below the usual range of 0.60 to 0.69.
A quality point rating between 0.80 to 0.89. The range of 0.90 to 1.00 astounds them.
Table 1: Examination of KMO and Bartlett's Sampling Adequacy
The KMO scale value: 0.887
The approximate Chi-Square value: 4651.167.
190 is degrees of freedom (df); sig. = 0.000.

Table 1: KMO and Bartlett's Test

KMO and Bartleett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		*0.887*
Bartleett's Test of Sphericity	Approx.Chi-Square	4651.167
	df	190
	Sig.	0.000

"Bartlett's Test of Sphericity" was used by the researchers to assess the statistical significance of the correlation matrices. If the KMO value was 0.887, the sample size was deemed adequate. Bartlett's Test of Sphericity provided the researcher with a P-value of 0.00. Consequently, a significant test result using Bartlett's Test of Sphericity indicates that the correlation matrix is not a correlation matrix.

Independent Variable

Current State of Pickleball Teaching

Pickleball is a paddle sport that combines the components of badminton, tennis and other racket sports. Pickleball is a fast-paced indoor and outdoor game that can be played on a court which is badminton-sized with short-handled paddles and a perforated hollow plastic ball over a low net. This sport can be played with two pairs of players or two opposing players. The structure and pedagogical methods applied to instruct university students of China in a professional and educational context are defined as the current state of pickleball teaching. This teaching method of this sport is a blend of traditional and modern coaching techniques that emphasise player engagement and skill development (Kellas et al., 2025). The teaching process of the pickleball sport has been rapidly developed through digital tools and performance-based video analysis. The pickleball teaching method is not only based on the fundamental skills, but it is also dependent on strategic thinking and game awareness. The structured lesson plans and assessment frameworks support pickleball being incorporated into the physical education curriculum in universities. In addition, the current state of pickleball teaching is accommodated to various age groups and skill levels to make the ball game more attainable to beginners and advanced players. Overall, the pickleball

teaching method reflects the adaptive and professionalised approach to its rising university students (Turan, 2024).

Dependent Variable

Outcomes of pickleball teaching in Chinese universities

The outcomes of pickleball teaching indicate a positive impact on educational and social dimensions in Chinese universities. Participation in pickleball classes improves students' physical fitness and hand-eye coordination. It is especially effective in encouraging consistent participation of students with varying fitness levels. Pickleball also develops self-confidence and emotional well-being among the students at universities in China. The enjoyable nature of the pickleball sport helps students to relieve their academic pressure, along with a positive attitude toward their physical activity. Moreover, pickleball teaching increases students' motivation in sports. It helps to improve lifelong exercise habits, aligning with fitness awareness and public health with wider national goals (Ryu et al., 2022). The inclusion of pickleball sports in Chinese universities introduces a modern and versatile sport that combines the characteristics of additional racket games through physical education programmes. Pickleball also fosters teamwork and cooperation among Chinese students, as it encourages interaction and peer monitoring. However, the outcomes of pickleball teaching methods face some challenges in Chinese universities. These challenges include the limited availability of instructors and insufficient infrastructure. Additionally, the pickleball in the educational system is in an early stage, resulting in inappropriate teaching quality and program arrangements. Finally, although the pickleball teaching process benefits the Chinese university students, its long-term effect depends on the modern professional training system and improved curriculum development (Weidong et al., 2026).

Relationship between the current state of pickleball teaching and outcomes of pickleball teaching in Chinese universities

The current situation of pickleball teaching has improved in teaching practices to influence the outcomes of students. The pickleball teaching in China is developing by increasing popularity and adopting modern technologies in teaching methods for students. However, the pickleball sport is also facing some challenges, such as insufficient training approaches and standardised teaching elements. The standard teaching method significantly influences the outcomes of students in Chinese universities. For instance, if the teaching method is well-structured and interactive, the students become better in physical fitness and improved coordination with others. Research demonstrated that participation in pickleball sport enhances students' psychological and physical well-being, as the sports represent the enjoyable and innovative learning environment (Zhou, 2026). In addition, teaching quality influences the motivation to participate, and well-organised instruction structure helps to increase the interest among students. Conversely, the limitations of the pickleball teaching method restrict the positive outcomes of pickleball teaching in Chinese universities. Some research also indicates that insufficient curriculum design and improper instruction reduce students’ engagement and interest in learning. The lack of systematic teaching frameworks reduces the realisation of the benefits of pickleball education (Qian, 2024). Finally, the current state of teaching methods determines the positive outcomes to represent the development and institutionalisation of pickleball programs. Therefore, improving the teaching strategies and institutional support will play an important role in developing the physical and psychological benefits among the students in Chinese universities.

Based on the discussion, a hypothesis is developed by the researcher to identify the important connection between the current state of pickleball teaching and outcomes of pickleball teaching in Chinese universities.

"H_{01}: There is no significant relationship between the current state of pickleball teaching and outcomes of pickleball teaching in Chinese universities."
"H_1: There is a significant relationship between the current state of pickleball teaching and outcomes of pickleball teaching in Chinese universities."

Table 2: H_1 ANOVA Test

ANOVA					
SUM					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig**
Between groups	86,647.934	170	8990.021	1311.646	0.000
Within Groups	738.498	329	6.854		
Total	87,386.432	499			

This study has represented significant outcomes. With a distinct F-value of 1311.646 and a distinct p-value of 0.000, researchers can determine that the statistical significance is considered if the value is below the 0.05 alpha level. The findings of the study emphasised that the null hypothesis was rejected, while the alternative hypothesis, "**H1: There is a significant relationship between the current state of pickleball teaching and the outcomes of pickleball teaching in Chinese universities**," was accepted.

Findings and Discussion

The discussion emphasised that the current state of pickleball teaching significantly impacted the outcomes of pickleball teaching in Chinese universities. The findings indicated that a well-structured teaching method and a knowledgeable instructor increase the students' interest in learning new sports and improve physical fitness. It was observed that the implementation of modern game-oriented strategies and skill-based training motivates students in participation and enhances physical fitness programmes. The outcomes of the study indicated that an enjoyable sports environment develops psychological well-being and self-efficacy among students. Moreover, the study elaborated that the pickleball teaching developed the social skills of students, such as teamwork and communication skills with other participants. The study results emphasised that students who actively participated in the pickleball sport reduced their academic stress and developed more physical activity with positive thoughts. This study evaluated that the pickleball sport is not only beneficial for physical fitness, but it also increases emotional and social skills among students in a Chinese university. However, the discussion underscored the lack of trained instructors, and the absence of proper elements has restricted the potential of the outcomes of pickleball teaching. This limitation affected the consistency of teaching quality and the arrangements of pickleball programs. Moreover, support of institutions and integration at the policy level remained insufficient because of the developmental stage of pickleball sport. The discussion also indicated that the ANOVA results and statistical analysis ensure the significant interrelationship between the current

state of pickleball teaching and the outcomes of pickleball teaching in Chinese universities, rejecting the null hypothesis. Finally, it can be understood from the discussion that the training strategies and appropriate infrastructure efficiently increase the development of social and emotional skills in outcomes of pickleball teaching in the Chinese university context.

The results of the research study evaluated that the current state of pickleball teaching efficiently influenced the outcomes of pickleball teaching in universities in China. The findings of the study indicated that the structured and well-built infrastructure positively influenced the development of social and emotional skills and physical fitness of students in Chinese universities. The students who were exposed to interactive and contemporary teaching methods had higher levels of engagement and hand-eye coordination compared to students who received less structured instruction. The findings of the research highlighted that the well-organised infrastructure significantly influenced the efficiency of pickleball instruction. Additionally, pickleball instruction was proven to have a positive impact on university students' psychological development. The students who played pickleball experienced reduced academic stress and improved physical fitness. Students were motivated to actively participate in the pickleball sport because it was trained in an enjoyable and learning environment. The findings also indicated that the teaching of the pickleball sport has improved students' social interactions. The sport promoted teamwork and communication, which helped students develop interpersonal connections. These social advantages demonstrated pickleball's wider educational worth beyond physical well-being. But the findings also demonstrated that several limitations hindered the efficacy of pickleball instruction. The inadequate infrastructure and a lack of curricular integration restricted the continuous delivery of well-structured training. Notwithstanding these limitations, the statistical analysis supported the acceptance of the alternative hypothesis by confirming a substantial correlation between the status of pickleball instruction and its results. Finally, the results highlighted the necessity of better instructional techniques and institutional assistance.

Conclusion

The study concluded that the outcomes of pickleball teaching at Chinese universities were significantly and positively influenced by the current state of the pickleball teaching method. It was discovered that students' physical health and skill development were improved when organised teaching approaches were paired with contemporary instructional tactics and interactive learning infrastructure. According to the study, students who took part in well-run pickleball programs had gains in both their physical and mental health, including less academic stress and more self-assurance. In addition, the results emphasised that teaching pickleball supported students in developing social and emotional skills. The null hypothesis was rejected because of the statistical analysis. The ANOVA results demonstrated a strong and substantial association between the teaching strategies and the outcomes of this study. But the study also indicated several challenges that hindered the efficacy of the pickleball teaching method. These included insufficient institutional and policy support, as well as poor infrastructure. These limitations demonstrated that pickleball's development was still in its early stages and needed more focus, despite the sport's great potential as an important part of university physical education. In conclusion, it can be concluded that institutional support and instructional design quality were critical to pickleball teaching performance. It was determined that enhancing curriculum integration and making infrastructural investments may improve pickleball education's long-term results. The proper training procedure by knowledgeable instructors may also motivate the

students to participate in the pickleball sport. Therefore, the study underlined that if the right policies were put in place, pickleball may play a significant role in encouraging a healthy lifestyle and holistic student development.

This study demonstrated the significant role in contributing to the theoretical and practical advancement of the pickleball teaching method in Chinese universities. The study may improve the body of knowledge on developing sports in higher education by offering empirical data on the connection between instructional strategies and student outcomes. The study may emphasise that well-structured teaching methods and institutional support may significantly improve the way of students' physical, psychological, and social development. The study may be significant for teachers and curriculum designers since it provides information on the way to improve instruction and create successful physical education programs. The results of the study also encouraged policymakers to invest in infrastructure and training to acknowledge pickleball as an important part of the university curriculum. Additionally, the study also promoted lifelong physical activity and student well-being by highlighting the wider educational benefits of incorporating cutting-edge sports into academic settings.

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