https://doi.org/10.51483/IJEDT.5.2.2025.63-70 ISSN: 2788-5011

SvedbergOpen
DISSEMINATION OF KNOWLEDGE

International Journal of Education and Teaching

Publisher's Home Page: https://www.svedbergopen.com/

Research Paper Open Access

The Impact of ChatGPT on College Students' Sports Skill Acquisition

DaPeng Tang[1], Xiaorong Wu[2], GaoYang Lou[3] and Xingyu Liu[4*]

[1]The Faculty of Education, Southwest University, Chongqing, China; College of Physical Education, Henan Agricultural University, Zhengzhou, China. E-mail: tangda27@126.com

[2]The Faculty of Education, Southwest University, Chongqing, China. E-mail: 626051884@qq.com

[3]College of Physical Education, Henan Agricultural University, Zhengzhou , China. E-mail:lougaoyang1997@163.com

[4]The Faculty of Education, Southwest University, Chongqing, China. E-mail:1837910739@qq.com

Article Info

Volume 5, Issue 2, December 2025
Received : 09 September 2025
Accepted : 07 December 2025
Published : 25 December 2025
doi: 10.51483/IJEDT.5.2.2025.63-70

Abstract

This study explores the impact of ChatGPT on college students' sports skill acquisition, aiming to address college students' difficulties in systematically mastering specialized sports skills and tap into the potential of ChatGPT in innovating sports education.Using a qualitative research design, 31 undergraduate students aged 18~23 with diverse majors and sports backgrounds were selected as subjects. Data were collected via questionnaires and one-on-one semi-structured interviews , with descriptive statistics analyzing demographic and sports learning profiles and content analysis/text mining extracting themes from interview transcripts.Results show most students support ChatGPT, recognizing its auxiliary role in understanding movement concepts, mastering technical details, addressing classroom teaching gaps, and enhancing skill mastery when combined with real practice. However, challenges exist: requiring in-depth contextual dialogue for personalized content, geographical restrictions on tool access, and potential over-reliance leading to rigid movements.The study confirms ChatGPT as a valuable auxiliary tool for college students' sports skill learning, providing references for AI integration into physical education.

Keywords: *ChatGPT;College Students;Sports Skill Acquisition*

1. Introduction

College students' sports skill learning is a comprehensive process involving the coordinated development of sports techniques, tactical awareness, and physical and mental qualities, which is crucial for personal overall development and lifelong sports practice. However, many college students face difficulties in systematically mastering and effectively improving specialized sports skills. Therefore, exploring a new method suitable for students' skill learning becomes particularly important. With technological development, the emergence of artificial intelligence technology has promoted social progress a nd provided new pathways for sports education. Through intelligent training tools and personalized learning platforms, the efficiency and quality of college students' sports skill learning can be effectively enhanced.

ChatGPT, an conversational AI model developed by OpenAI, can interact with users in a highly natural manner, providing smooth and in-depth interactive experiences (Open AI, 2022). It can generate natural language based on students' sports skill learning situations, achieving high-quality dialogue interactions (AlAfnan *et al.*, 2023). Although it cannot demonstrate physical movements or provide direct tactile feedback like a teacher or coach, it can leverage its

* *Corresponding author: Xingyu Liu, The Faculty of Education, Southwest University, Chongqing, China. E-mail:1837910739@qq.com*

vast knowledge base, unlimited patience, and powerful reasoning abilities to evolve from a simple information provider to an around-the-clock, omniscient, and highly personalized intelligent teacher. This role transcends the traditional definition of a tool, no longer passively responding to queries but actively guiding, deeply engaging, and systematically planning the entire learning process, making it the optimal support for improving college students' sports skill learning.

Therefore, this research focuses on the impact of ChatGPT on college students' sports skill learning. By conducting interviews and practical investigations to gather data, it primarily analyzes how students use ChatGPT to understand movement techniques, plan personal training, and correct technical errors, while also exploring deeper information about their usage attitudes, acceptance levels, and psychological experiences. To enhance the comprehensiveness and reliability of the data, the study also employs questionnaire surveys to broadly collect quantitative information about users' evaluations of ChatGPT's auxiliary effects, satisfaction levels, and usage preferences. The aim is to assess the role of ChatGPT in college students' sports skill learning process, with particular attention to students' subjective feelings and actual usage experiences when using it as a training auxiliary tool. The research seeks to deeply explore the interaction methods between students and ChatGPT, as well as the actual impact of this technology on their sports skill mastery and development.

The research results are of significant importance to college physical education teachers, sports course designers, educational technology developers, and sports education researchers. By gaining an in-depth understanding of students' perceptions and experiences of ChatGPT in assisting sports skill learning, it will help better integrate artificial intelligence technology into sports courses, promote the development of more effective auxiliary tools, and improve teaching methods for enhancing college students' sports skill learning.

2. Literature Review

In recent years, countries worldwide have provided a nurturing environment for artificial intelligence through policy support and financial backing, bringing policy dividends that have greatly promoted the high-quality development of AI-enabled sports education and the mutual integration of artificial intelligence and sports education. AI tools like ChatGPT, as the "leading goose" of the new round of technological revolution, have received extensive attention, with many countries viewing them as long-term and important developments in the educational field (Ma and Xiang, 2023).

ChatGPT is a chatbot based on the GPT-4 model that can engage in natural language communication with students, providing guidance and feedback on sports knowledge and skills. It plays a crucial role in improving students' learning processes, enhancing learning outcomes, and improving teachers' understanding of teaching content and application of teaching methods (Cai *et al*., 2025). Tools like ChatGPT can achieve their auxiliary effect in sports skill learning through their instant generation, continuous question-and-answer interactions, and comprehensive knowledge. For the educational field, ChatGPT is a technology of special significance that can improve teaching efficiency and quality, broaden the width of teaching content and forms, enhance teaching interactivity, and promote personalized learning plans and learning methods. This allows students to have more suitable learning plans, more comprehensive learning approaches, and more feedback-rich learning experiences (Hu *et al*., 2024). ChatGPT provides learners with abundant high-quality learning resources, real-time feedback, and scaffolding effects to improve learning outcomes.

The concept of "digital education" has progressively evolved from an "Internet + Education" model to an "AI + Education" paradigm. Concurrently, driven by digital transformation, physical education has demonstrated a significant trend toward intelligent development (Gao, 2025). It can address issues in traditional sports teaching such as uneven resource allocation, lack of personalized teaching, and outdated evaluation systems (Zhang and Wu, 2025). The "AI + Education" approach is increasingly developing towards diversification, and the use of intelligent tools like ChatGPT provides learners with valuable learning resources, feedback channels, and authentic communication experiences, which can greatly compensate for the knowledge learning blind spots in current sports teaching.

Physical skill learning for college students is an important practical path to promoting comprehensive student development in higher education systems. In the context of physical skill learning, regardless of students' ability levels or physical fitness, they will encounter difficulties they cannot overcome. In such situations, to continue learning, students must seek help and guidance from others (Zhang and Peng, 2006).

Generative AI tools represented by ChatGPT are not only a "responsive" knowledge Q&A system that can automatically generate content based on user prompts and quickly answer questions, but also possess outstanding "one-click generation" capabilities. Consequently, they hold extensive application potential within the domain of motor skill learning (Jin *et al*., 2024). ChatGPT has become a powerful auxiliary tool in college physical education and student physical skill learning, producing significant positive impacts on the learning process. The efficiency and quality of college students' physical skill acquisition play a crucial auxiliary and guiding role in school sports and the entire physical education field, and can provide personalized recommendations for individual postures and activities, enhancing

training effectiveness and the enjoyment of physical activities (Zhang and Li, 2025; Chen, 2025). As the depth of usage and application scenarios of interactive tools like ChatGPT continue to be explored, such tools have enormous potential to improve the quality and efficiency of college students' physical skill acquisition, capable of capturing users' preferences and providing comfortable, efficient, and adaptive self-learning resources and pathways.

The application of artificial intelligence can enhance the standardization, scientificity, accuracy, and intelligence of physical training (Wang, 2025). Through detailed personal and learning data input and real-time process monitoring, AI can identify learning and training misconceptions, provide comprehensive and holistic recommendations for related deficiencies, enabling users to immediately correct errors, advance learning progress, optimize learning mastery processes, and further improve learning and training efficiency, thereby laying the foundation for achieving skill learning objectives.

The emergence of ChatGPT technology has disrupted traditional educational models, significantly improving the efficiency and quality of physical skill learning. It can provide students with more intelligent, personalized educational assistance services and various novel teaching methods, effectively helping students resolve learning challenges, enhance physical learning outcomes, and offer real-time feedback and guidance. Simultaneously, it can stimulate college students' motivation and interest in physical skill learning, timely offering praise, suggestions, and support, and sharing successful cases and experiences, allowing learners to gain confidence from non-real-world sources (Jin *et al*., 2024). By integrating ChatGPT into the teaching process and expanding traditional teaching environments while promoting teaching method reforms, personalized exercise plans, diverse exercise choices, and interactive support can be provided (Zhang and Liu, 2024). Evidently, ChatGPT's instant output and feedback functions can significantly improve the scientificity and effectiveness of college students' physical skill learning, enhance students' motivation for autonomous physical skill learning, stimulate their interest, satisfy individualized guidance for different physical skills, and provide powerful technical support for better skill acquisition.

The integration of AI technology into college physical education positively influences students' physiological and psychological-emotional well-being while comprehensively improving students' satisfaction with physical exercise (Xu, 2025). As AI continues to develop rapidly, it demonstrates enormous potential for integration with physical education and training (Mao and Chen, 2024). AI's ease of information access, content richness, and convenience can help college students enhance their interest in physical skill learning during usage, better achieve physical skill acquisition, continuously improve satisfaction with physical skill learning, and more comprehensively demonstrate the learning application functions of such tools.

AI-assisted physical education requires comprehensive intelligent enhancement and transformation. Research suggests that better promotion of AI-assisted college physical education necessitates implementing smart campus physical education infrastructure, cultivating talent echelons for campus physical education, and constructing a quality system for smart physical education (Lin *et al*., 2023). Clarifying the smart physical education construction system for colleges is crucial for students using tools like ChatGPT to assist physical skill learning. The system's construction and environmental changes provide multiple possibilities, better meeting ChatGPT's needs in students' daily physical skill learning.

Nevertheless, ChatGPT also has numerous limitations in college students' physical skill learning, lacking practical application in school sports (Li and Shan, 2023), such as insufficient precision and immediacy in dynamic movement guidance, lack of emotional interaction and humanistic care, and weak situational decision-making and adaptability. Compared to traditional physical teaching models, ChatGPT cannot provide physical intervention or "hands-on" teaching, missing teachers' emotional support and moral education infiltration. In the college physical skill learning domain, ChatGPT primarily plays an auxiliary role, with certain misconceptions about tool usage. Therefore, there is an urgent need to clarify students' emotional attitudes, satisfaction levels, and usage strategies to better formulate policies for tool usage and provide comprehensive guidance. Current literature predominantly uses logical text to discuss ChatGPT's relevance to physical skill learning, lacking quantitative investigative research. Thus, obtaining related data through interviews and questionnaire surveys to understand students' comprehensive experiences and genuine attitudes toward using ChatGPT for physical skill learning is critically important, capable of enriching existing research systems and content, and providing theoretical references and practical choices for college physical skill learning.

3. Research Methods

3.1. Research Design

This study adopts a qualitative research design to explore ChatGPT's impact on college students' physical skill acquisition. Qualitative research enables a more in-depth understanding of students' experiences and influences when using ChatGPT to acquire physical skills, providing comprehensive and targeted qualitative data. The research primarily collects data

through questionnaire surveys and further conducts interviews based on questionnaire content. By analyzing interview content, meaningful clustered themes and keywords are extracted.

3.2. Research Subjects

The research subjects are students from different majors in undergraduate universities. In the selection of subjects, factors such as age, gender, professional background, and degree of sports participation were fully considered to further ensure the overall representativeness of the respondents.

3.3. Data Collection

The research was conducted by distributing questionnaires online and offline. By categorizing the questionnaire results and fully considering different professional backgrounds, interviewees were selected. Semi-structured interviews were carried out with the interviewees to gain an in-depth understanding of college students' thoughts, feelings, attitudes, and current status regarding using ChatGPT to acquire sports skills. All interviews were conducted in a one-on-one format in spacious, relaxed, and non-office environments, aiming to enable interviewees to complete the interviews in a non-task-oriented manner and obtain their true, free, and comprehensive thoughts. To ensure the reproducibility of interview content, the entire interview process was audio-recorded to guarantee data authenticity and accuracy. Interview questions covered multiple aspects of ChatGPT's impact on college students' sports skill acquisition, including:

The importance of sports skill acquisition.

The usefulness of ChatGPT for college students' sports skill acquisition.

The impact of ChatGPT on college students' sports skill acquisition.

College students' perceptions of using ChatGPT for sports skill acquisition.

College students' attitudes towards using ChatGPT for sports skill acquisition.

The limitations of college students using ChatGPT for sports skill acquisition.

To ensure the comprehensiveness and accuracy of the research, data was collected through both questionnaires and interviews. The questionnaire survey and interviews will provide basic data on the survey subjects' perceived attitudes, satisfaction levels, and shortcomings of ChatGPT as a tool for sports skill acquisition. The questionnaire design aims to measure the survey subjects' overall perception of using ChatGPT for sports skill acquisition, the degree of improvement in sports skill learning, and their preference tendencies towards ChatGPT's inherent functions and guidance.

4. Data Analysis

4.1. Descriptive Statistics of Respondents

In this study, while comprehensively considering college students' sports skill participants, the research was limited to undergraduate students, with the age range entirely distributed between 18-23 years old (Figure 1). In this survey, the

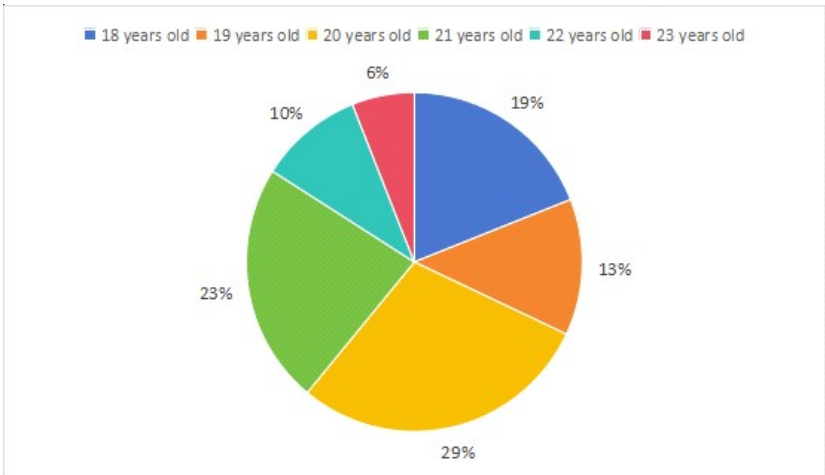

Figure 1: Age Proportion

gender distribution of respondents showed that male participants outnumbered female participants, with 19 males and 12 females participating (Figure 2). The survey revealed that college students' sports skill learning projects mainly included basketball, football, volleyball, rope skipping, badminton, tai chi, and other projects (Figure 3). Additionally, the results showed that the time spent by college students on sports skill learning varied significantly depending on their purposes, with most having approximately 2 years of sports skill learning experience.

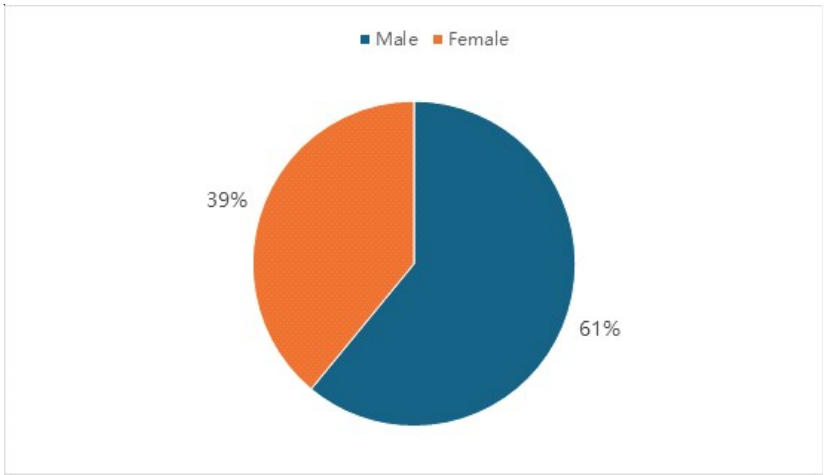

Figure 2: Gender Proportion

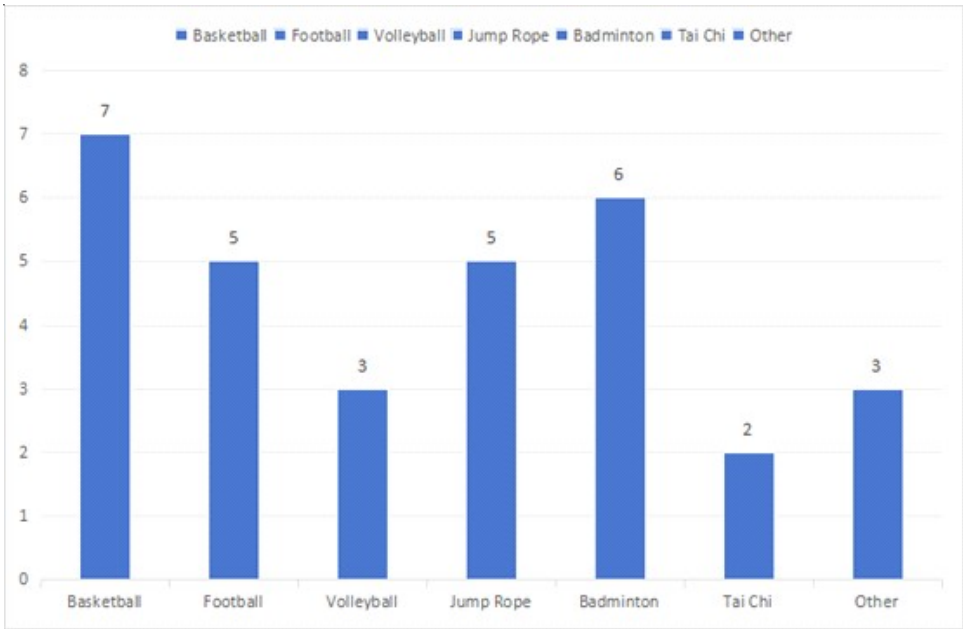

Figure 3: Proportion of Learning Sports Skills Through ChatGPT

4.2. Text Data Analysis

This study employed content analysis and text mining methods, extracting key theme words and clustering themes through content coding and text mining of interview transcripts. This process focuses on systematically identifying interviewees' responses and descriptions, integrating repeatedly mentioned concepts and ideas to highlight thematic characteristics. By extracting usable effective information data from the interview text system, the study identified data development trends and operational patterns. Strictly adhering to the research theme, the coding types were determined, key words were extracted from interview texts, and these keywords were comprehensively clustered to ultimately reveal several clustering themes, clarifying the central points of interview content and providing an in-depth understanding of ChatGPT's impact on college students' sports skill acquisition.

The keyword theme clustering analysis comprehensively revealed the participants' sports skill learning experiences, including the value of sports skill learning, realistic challenges, learning tool usage, and the influences of factors such as gender and major. The study not only enriched the existing knowledge system but also provided practical references for future research on college students' sports skill learning.

5. Discussion

In this section, we will specifically discuss the data analysis results regarding undergraduate students' use of ChatGPT to assist in learning sports skills. The survey shows that most college students believe using ChatGPT can facilitate sports skill acquisition, displaying a clear supportive tendency towards ChatGPT and recognizing its significant role in skill learning (Figure 4). These students believe that ChatGPT can help them in the sports skill learning process, including understanding movement concepts, mastering movement details, recognizing movement similarities and differences, strengthening movement memory, clarifying tactical components, and improving technical proficiency. A particularly noteworthy aspect in the survey results is that participants emphasized that after using ChatGPT to learn sports skills or generate a training plan, practicing in real-world space according to ChatGPT's recommendations can lead to a greater degree of skill mastery. ChatGPT's control over sports skill learning details can better address the weak points typically taught in class, such as timing of force application, movement angles, and release angles. Through context-specific settings tailored to individual students, learners can obtain personalized analytical insights. Some college sports skill learners believe that detailed theoretical deconstruction combined with real-world practice has significantly enhanced their skill acquisition. It is important to note that in the survey results, ChatGPT's impact on college students' sports skill learning effectiveness is more pronounced in providing guidance for movement correctness and creating precise personal learning plans and strategies. Simultaneously, the survey explored the potential reasons why college students use ChatGPT to improve sports skill acquisition. Based on respondents' feedback, several influencing factors were summarized,including:tool convenience,innovative search experience, recommendations from instructors or classmates, detailed analysis of basic sports skills, comprehensive coverage of sports skills, and the ability to provide targeted advice based on different contexts and individual needs.

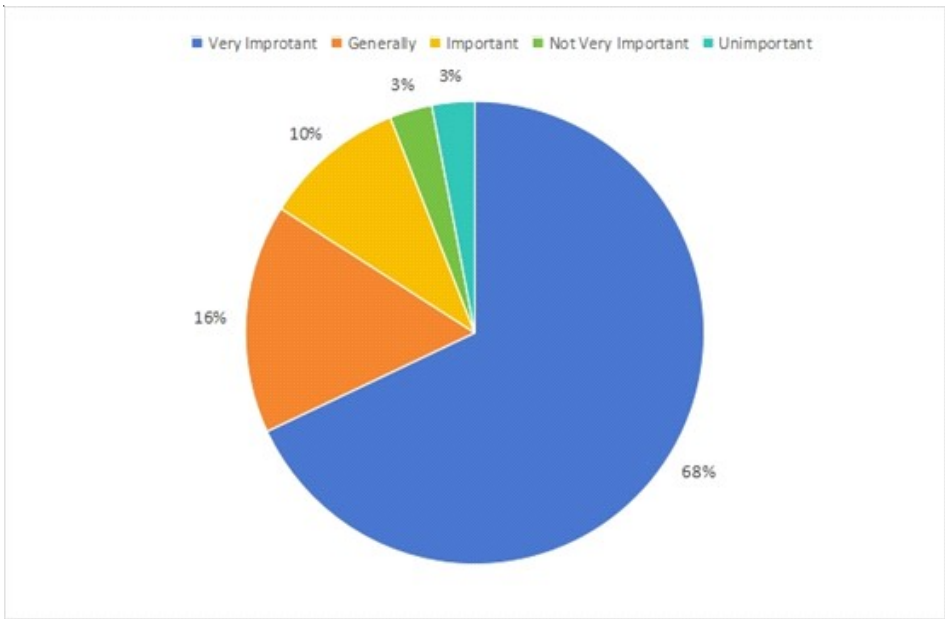

Figure 4: Proportion of College Students' Attitudes Towards Learning Sports Skills Using ChatGPT

Through the above discussion, the advantages of ChatGPT in college students' sports skill acquisition process have been demonstrated. However, the specific investigation also revealed certain practical challenges faced by college students when using ChatGPT to acquire sports skills. Through the survey, some respondents feedback that to obtain more personalized content when using ChatGPT, more contextual dialogue with the tool is needed to output the desired results, but initially, its functionality cannot be well utilized. Additionally, geographical reasons may lead to tool output restrictions and slow website access. Meanwhile, a small number of respondents believe it might limit their understanding

of sports skills, gradually forming rigid movements, and becoming overly dependent on ChatGPT's output, unable to properly focus on the actual status of their sports skill acquisition in practice.

The above content comprehensively presents the diverse results of college students using ChatGPT for sports skill acquisition, providing important references for attitudes, advantages, challenges, and related impacts of such tools. It clarifies college students' attitudes and methods of using artificial intelligence software like ChatGPT for learning, enables understanding of the usage scenarios and functions of such tools, and can effectively address the challenges of college students' sports skill learning, thus providing an important foundation for developing targeted strategies.

All respondents signed an informed consent form, ensuring their full understanding of the research purpose, voluntary participation principle, and confidentiality of response content. Respondents have the right to withdraw from the research at any time without consequence. This research adheres to data protection and privacy regulations, effectively guaranteeing respondents' anonymity and information confidentiality. Every stage of the research process strictly followed ethical guidelines.

6. Conclusion

In summary, this research provides certain content presentation for understanding college students' attitudes, limitations, and impacts of using ChatGPT in sports skill acquisition. It believes that college students can use ChatGPT to assist sports skill learning to a certain extent, but practical challenges exist in the specific usage process. For this research, it must be recognized that the research conclusions need to be interpreted and referenced within specific sample volumes and the specialized background of college students' sports skill acquisition, and a cautious attitude should be maintained regarding the broad applicability of the results. To better refine the research findings, future research should extensively incorporate college student groups from different levels and learning projects, attempting to cover more learning levels to comprehensively grasp the mechanism of ChatGPT's impact on college students' sports skill acquisition. Simultaneously, clarifying ChatGPT's long-term effectiveness in sports skill acquisition should be listed as research content, continuously expanding its connotative scope and gradually incorporating other sports learning content to seek a more comprehensive understanding of ChatGPT's influence and role in college students' sports skill acquisition. By studying these contents, future research can provide paradigmatic support for different population types using AI chatbots (such as ChatGPT) to assist sports skill acquisition, further offering a richer perspective for AI applications in physical education.

References

AlAfnan, M.A., Dishari, S., Jovic, M. and Lomidze, K. (2023). ChatGPT as an Educational Tool: Opportunities, Challenges, and Recommendations for Communication, Business Writing, and Composition Courses [J]. *Journal of Artificial Intelligence and Technology*, 3(2), 60–68.

Cai, H.Y., *et al.* (2025). Harnessing AI for Teacher Education to Promote Inclusive Education: Investigating the Effects of ChatGPT-Supported Lesson Plan Critiques on the Development of Pre-Service Teachers' Lesson Planning Skills [J]. *The Internet and Higher Education*, 67, 101022.

Chen, X.C. (2025). Research on Entertainment Robots Based on Artificial Intelligence Interaction for Human Posture Recognition and Sports Activity Monitoring [J]. *Entertainment Computing*, 52, 100761.

Gao, M.G. (2025). The Realistic Dilemma and Relief Path of Intelligent Physical Education in China [J]. *Science & Technology of Stationery & Sporting Goods*, (14), 151–153.

Hu, Z.C., Liu, Z.H. and Su, Y.S. (2024). AI-Driven Smart Transformation in Physical Education: Current Trends and Future Research Directions [J]. *Applied Sciences*, 14(22), 10616.

Jin, B.X., Wu, B.S., Li, P.F. and Yu, M. Q. (2024). Analysis of the Influence of ChatGPT on Students' Physical Education Learning [J]. *Sports World*, (7), 47–49.

Jin, B.X., Wu, B.S., Li, P.F. and Yu, M.Q. (2024). Analysis of the Influence of ChatGPT on Students' Physical Education Learning [J]. *Sports World*, (7), 47–49.

Li, H.M. and Shan, J.B. (2023). Research on the Application of Artificial Intelligence in College Physical Education [J]. *Adult and Higher Education*, 5(6).

Lin, Y., Liu, H.L., Zhao, C. and Wang, X.C. (2023). Focusing on the Deep Integration of "AI + Sports" and Promoting the Construction of "Smart Sports" in Colleges and Universities [J]. *Contemporary Sports Technology*, 13(33), 66–69+74.

Ma, W.B. and Xiang, Z.H. (2023). AI Enables Sports: Research on the Application of Sports Intelligent APP in Physical Education Teaching [J]. *Sports Teacher*, 46(4), 1–5.

Mao, M. and Chen, J.X. (2024). Research on the Application Technology of Artificial Intelligence in College Physical Education and Training [J]. *Applied Mathematics and Nonlinear Sciences*, 9(1).

OpenAI. (2022). Introducing ChatGPT [Blog post]. Retrieved from https://openai.com/blog/chatgpt

Wang, X.H. (2025). AI-Based Big Data Platform for Sports Training Construction and Application [J]. *International Journal of Information System Modeling and Design (IJISMD)*, 16(1), 1–23.

Xu, H.B. (2025). AI-Powered Technologies in Physical Education: Impact on Physical and Psycho-Emotional Well-being of Students [J]. *The Journal of General Psychology*, 1–22.

Zhang, C.S. and Li, L. (2025). The Value, Risk and Avoidance of Artificial Intelligence Application in Physical Education Development [J]. *Sichuan Sports Science*, 44(4), 21–27.

Zhang, X.P. and Peng, Q. (2006). Academic Help-Seeking during College Students' Acquiring Athletic Skills [J]. *Journal of Chengdu Sport University*, (6), 122–125.

Zhang, Y., Fu, X. and Wu, Z.X. (2025). A Case Study of Big Data and Artificial Intelligence in Physical Education [J]. *Journal of Cases on Information Technology (JCIT)*, 27(1), 1–20.

Zhang, Y.F. and Liu, X.Q. (2024). Using ChatGPT to Promote College Students' Participation in Physical Activities and Its Effect on Mental Health [J]. *World Journal of Psychiatry*, 14(2), 330–333.

Cite this article as: DaPeng Tang , Xiaorong Wu, GaoYang Lou and Xingyu Liu (2025). The Impact of ChatGPT on College Students' Sports Skill Acquisition. *International Journal of Education and Teaching,* 5(2), 63-70. doi: 10.51483/IJEDT.5.2.2025.63-70.