

Exploration and Practice of Learning Methods in College Baseball Teaching

Jingtao Zhao^{1, a *}

¹Xi'an Technological University, Xi'an, Shaanxi, China

^a1713594693@qq.com

Abstract. Baseball, as a team sport that combines competitiveness and entertainment, has gradually gained attention in college physical education in China in recent years. However, due to its late start and limited popularity, baseball teaching in colleges still faces problems such as uneven student foundations, restricted teaching conditions, and a lack of systematic learning methods. This article, from the perspective of learning method research, combines sports education and learning theories to analyze the current situation of baseball teaching in colleges and proposes diversified learning methods such as stratified learning, situational teaching, cooperative learning, multimedia assistance, and self-reflection. Through literature research, case analysis, and teaching practice verification, this article believes that scientific learning methods can not only improve students' sports skills and tactical understanding abilities but also effectively stimulate students' learning interest and team awareness. Finally, this article looks forward to the reform direction of baseball teaching in colleges in the future, aiming to provide a reference for the development of baseball in colleges in China.

Keywords: Baseball teaching; Learning methods; College physical education; Cooperative learning; Teaching reform; Translated in accordance with the norms of academic papers.

1. Introduction

Baseball originated in the United States in the 19th century and is known as the "national sport". It has been widely popularized in countries and regions such as Japan, South Korea, and Cuba [1]. As a sport that combines individual skills with team coordination, baseball has unique value in cultivating students' physical fitness, psychological quality, and teamwork ability. Its characteristics are highly consistent with the "health + skills + personality" training goals in college physical education [2]. Compared with popular sports like basketball and football, baseball is more complex in terms of rules, field setup, and skill requirements. Even the basic rules cover multiple dimensions such as offense and defense transitions and base running judgments, which pose higher demands on learners' cognitive and practical abilities [3]. Since the 1980s, baseball has gradually been introduced in China. However, due to factors such as the high cost of field construction, the difficulty in equipping professional equipment, and low public awareness, college baseball teaching has remained in a slow development state and has not yet formed a large-scale and systematic teaching system [4].

In recent years, with the deepening of sports education reform and the advancement of the "Healthy China 2030" strategy, college physical education courses have shifted from focusing solely on physical exercise to fostering comprehensive qualities. This transformation has provided a new development opportunity for baseball teaching, as it emphasizes teamwork, rule awareness, and stress resistance, which are all crucial components of contemporary college students' comprehensive quality cultivation. However, from the perspective of actual teaching, college baseball teaching still faces multiple challenges. Most students have no exposure to baseball during their middle school years and need to start from the basics of rules and movements when they enter college. In contrast, a small number of students with club or training experience already possess initial skills. This "zero-to-beginner" stratification makes it difficult for unified teaching to meet the diverse learning needs of students. Additionally, standard baseball fields require specific dimensions for both the infield and outfield. Due to limited campus space, most colleges can only conduct teaching by modifying existing playgrounds or reducing the field size, which hinders the effective

implementation of tactical drills and team coordination. Moreover, baseball teaching demands highly specialized instructors who not only master teaching methods but also possess the ability to design tactics and provide on-the-spot guidance. However, currently, most college baseball courses are taught by non-specialized physical education teachers, making it challenging to ensure the professionalism and systematisms of the teaching.

From an international perspective, universities in baseball-developed countries such as the United States and Japan have established mature teaching systems. In the United States, universities incorporate baseball into campus cultural construction, integrating skill training and personality development through intercollegiate leagues and professional training camps. In Japan, almost all universities have baseball teams, and through a well-established hierarchical teaching mechanism, students of different levels can receive targeted guidance. These experiences indicate that a scientific teaching model and systematic learning methods are the core driving forces for the development of baseball teaching in universities. In contrast, in China, research on university baseball teaching still focuses on the feasibility of course offerings and venue construction plans, lacking in-depth exploration and practical application of learning methods, which fails to meet the diverse learning needs of students. Therefore, in light of the actual situation of Chinese universities, exploring suitable baseball learning methods has become a key task to break through the current teaching predicament and promote the popularization of baseball in universities.

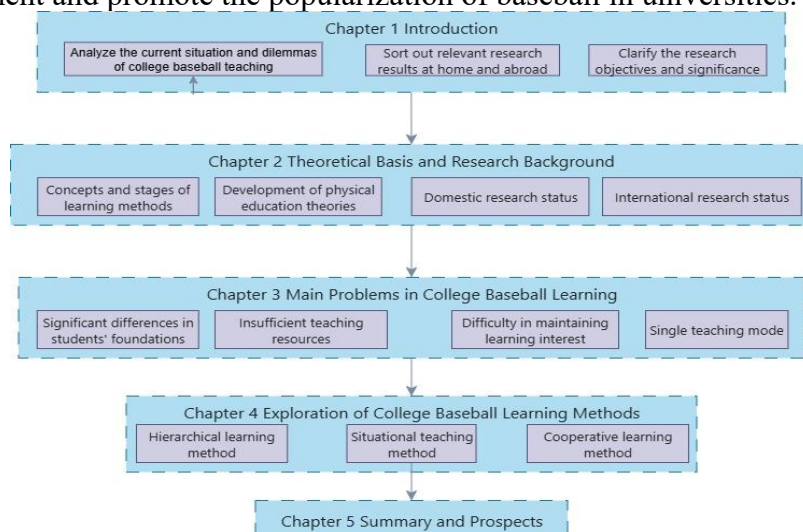


Figure 1. Overall Technology Roadmap

2. Theoretical Basis and Research Background

Learning methods refer to the systematic strategies and approaches adopted by learners to acquire knowledge and enhance skills. In physical education, they not only affect the efficiency of skill acquisition but also determine whether students can develop autonomous learning abilities [5]. Research in physical education indicates that the learning of motor skills goes through four stages: imitation, practice, reflection, and transfer. During the imitation stage, learners establish a mental image of the movement by observing demonstrations. In the practice stage, they form muscle memory through repetitive training. In the reflection stage, they adjust movement deviations with the help of feedback. In the transfer stage, they apply the learned skills to different situations. This pattern is particularly evident in baseball instruction. For instance, when hitting a ball, learners first imitate the correct swing posture, then adjust the timing of their swing through repeated practice, and finally adapt to different pitches in actual games [6].

From the perspective of the development of sports education theory, research on learning methods has shifted from a "skill-oriented" approach to a "comprehensive quality-oriented" one. In the early days of physical education, teaching was mainly characterized by one-way instruction where teachers demonstrated and students imitated, neglecting the students' subjectivity. With the application of constructivist learning theory and the theory of multiple intelligences, stratified

learning and cooperative learning have gradually become widespread. These methods emphasize designing teaching content based on students' ability differences and stimulating their learning initiative through interaction and collaboration, providing theoretical support for baseball teaching [7]. As a team sport, baseball learning not only involves individual skills such as pitching and batting but also requires the integration of tactical understanding and teamwork. For instance, base runners need to judge the timing of advancing to the next base based on the position of the hit and signals from teammates. This "skill-tactic-team" composite learning objective requires even more scientific learning methods for support [8].

Research on baseball teaching in domestic universities started relatively late, and the existing achievements mostly focus on the promotion of the sport and the construction of courses. Some studies have proposed ideas such as stratified teaching and situational teaching, but no specific operation plans have been formed. For instance, in stratified teaching, how to classify students and design differentiated teaching content remains unclear, and there is a lack of practical verification. The application of situational teaching is also limited to simple offensive and defensive simulations, without designing training tasks based on actual game scenarios. At the same time, most of the existing research neglects the hardware limitations of domestic universities and directly borrows foreign teaching experiences, making the proposed methods difficult to implement. For example, the "full-field tactical drills" carried out by foreign universities in standard fields cannot be implemented in the small-scale modified fields of most domestic universities. In addition, there are differences in the sports foundation and learning habits of Chinese students compared to those in foreign countries. Some students have a slower acceptance of complex rules and tend to feel intimidated by difficult movements. These factors all need to be taken into account in the design of learning methods.

International research on baseball learning methods in colleges and universities has achieved systematic results. American scholars have found through empirical research that the "practical application-driven" teaching method can effectively enhance students' tactical application ability, which means that students learn rules and master skills in simulated games rather than through theoretical lectures alone. Japanese scholars have proposed the "step-by-step training method", setting up three stages of basic movements, tactical cooperation, and practical confrontation based on students' skill levels, with corresponding assessment standards for each stage. These research achievements provide references for the exploration of baseball learning methods in Chinese colleges and universities, but they need to be adjusted and innovated in accordance with local teaching conditions to truly fit the actual teaching situation in Chinese colleges and universities.

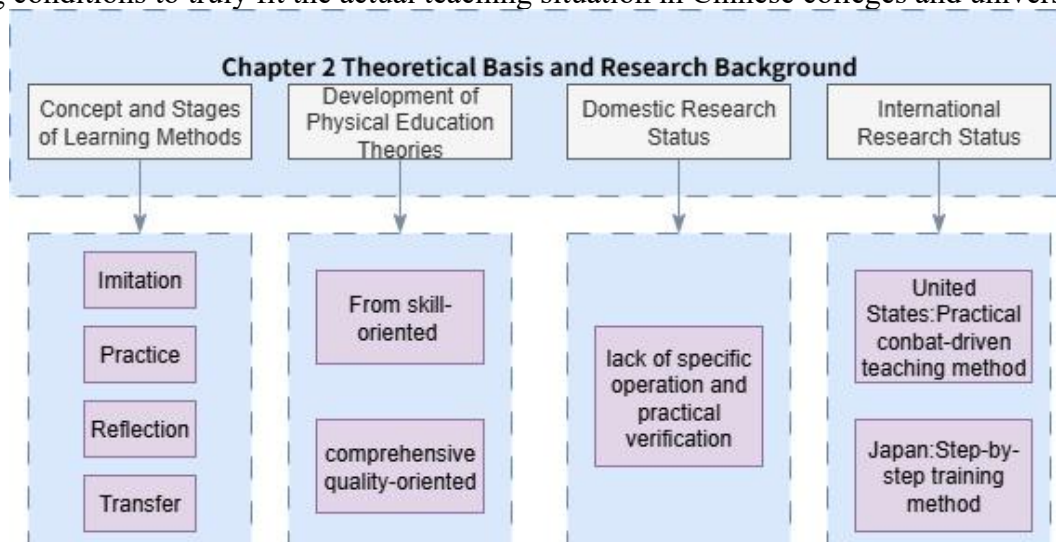


Figure 2. Theoretical Basis and Research Background Framework Diagram

3.Main problems in baseball learning in Colleges and Universities

3.1 significant differences in students' foundation and insufficient teaching pertinence. The basic level of baseball learners in colleges and universities presents obvious stratification, which has become a key factor affecting the teaching effect. The survey shows that more than 80% of the students belong to the "zero foundation" group, lack of understanding of Baseball Rules and game processes, and even confuse baseball with softball. When they first came into contact, they were often confused about the standing position, base running and exit conditions. In terms of technical movements, they didn't even master the basic movements such as holding the stick and passing the ball. They need to start with the most basic cognition and movement training. About 15% of the students have a preliminary understanding of baseball through community activities or short-term training, and master basic skills, such as catching the ball and swinging in place, but they are still unfamiliar with practical application and tactical cooperation. Only about 5% of the students have certain technical and tactical qualities, usually from traditional baseball schools or long-term school team training. They not only have standard movements and skilled skills, but also understand and implement tactical cooperation, and can participate in small-scale confrontation training. [9]

This level difference makes it difficult to give consideration to the unified teaching mode: if the teacher explains in detail for the students with zero foundation, the students with good foundation are prone to feel boring and pay less attention; If the tactical training is directly organized, the zero basic students may be frustrated, afraid of difficulties or even give up. Some teachers try to "practice in groups" and teach differently according to the level of students. However, due to the lack of scientific stratification standards and systematic teaching design, groups are often divided only according to classroom performance or self-report, and the training content has little difference. The teaching focus is still on the recovery of unified skills, which is difficult to achieve targeted guidance, but may reduce classroom efficiency.

Therefore, the key to improving the quality of baseball teaching in colleges and universities is to build a scientific hierarchical teaching system, clarify the ability standards and development paths of students at all levels, and support the corresponding teaching contents and methods.

3.2 insufficient allocation of teaching resources and limited practical training. Baseball teaching in colleges and universities is highly dependent on hardware resources, which is closely related to its sports characteristics and rule structure. Standardized baseball teaching needs to be equipped with a variety of professional equipment: in addition to bats, gloves and practice balls, different positions also need to be equipped with special equipment, such as catchers need to wear breast protection, leg protection and masks, pitchers need to use a pitching board, and batters need to wear protective devices such as helmets [10]. This equipment requirement based on functional division of labor makes the standardized training involving all staff face resource pressure. However, due to funding constraints, baseball equipment in domestic colleges and universities is generally insufficient, and the sharing mode of 3-4 people sharing gloves, using bats in groups in turn or multiple people alternately wearing protective equipment is often adopted. This "queuing practice" method significantly shortens the operation time of students, and it is difficult for technical movements to form muscle memory through repeated training, and the strength and proficiency of skill mastery are limited. At the same time, equipment with high frequency use and lack of maintenance is prone to aging and damage, further affecting the quality and safety of training.

Field conditions also restrict college baseball teaching. The standard baseball field covers an area of about 14000 square meters, including the inside and outside fields, home run areas and buffer zones. However, due to the shortage of land, most colleges and universities can only reconstruct 5000-8000 square meters of small training grounds in the playground or idle land. The lack of outfield distance, the lack of home run wall, and the nonstandard running path and pitching mound size make it difficult to carry out typical actions such as "home run hit", "outfield high-altitude catch" and "long pass blocking". Affected by this, the content of tactical teaching was forced to be reduced. Teachers mostly focused on the basic cooperation in the infield, such as passing and receiving the ball, filling positions and double play cooperation, while it was difficult to implement

the whole field coordination tactics such as outfield defense, playing and running, and sacrificing the high-flying ball.

To sum up, the dual restrictions of hardware resources formed by the shortage of equipment and the nonstandard field not only hinder the improvement of students' technical level, but also restrict the cultivation of tactical literacy and practical ability, which has become the key bottleneck of baseball teaching in colleges and universities.

3.3 learning interest is difficult to maintain, and the degree of active participation is low.

The "high threshold" characteristics of baseball lead to the loss of students' interest in learning in college teaching. First of all, from the perspective of rules, baseball contains more complex basic rules, such as "strike zone judgment", "forced base entry", etc. beginners often need to explain and demonstrate for many times to accurately understand and apply [11]. In contrast, the rules of basketball, football and other sports are relatively intuitive. Students can get rule feedback through practice in a short time and experience instant sense of achievement, while there is a large cognitive load in the understanding and application of baseball rules.

Secondly, from the perspective of skills, baseball hitting needs to coordinate the strength of arms, waist, legs and other parts. Beginners need 20 to 30 repeated exercises to master the basic movement rhythm and swing accuracy [11]. Passing and catching, base running and pitching also need high-frequency repetitive training to form muscle memory. Due to the complex action and obvious feedback delay, students often miss the ball or receive the ball many times in the initial learning stage, which is prone to frustration and self-denial, and their interest in learning decreases.

In addition, baseball courses in colleges and universities are mostly offered in the form of elective courses, with scattered class hours, usually only once a week and two class hours each time. Such a course arrangement limits the opportunities for students' continuous training, fails to form a stable habit of skill practice, and significantly reduces the learning effectiveness constrained by time and space. In the long run, it is difficult for students to make systematic progress in mastering skills and understanding tactics, and their learning motivation and enthusiasm for participation are further frustrated.

To sum up, the high threshold characteristics of baseball increase the difficulty of learning at both the level of rule understanding and skill mastering. In addition, due to the scattered curriculum arrangement and the lack of practice time, students are prone to frustration and interest decline at the initial learning stage. This phenomenon not only affects the improvement of students' skills, but also restricts the cultivation of tactical understanding and team cooperation ability. Therefore, it is urgent to improve students' learning enthusiasm and sustainability through scientific teaching design and incentive mechanism in college baseball teaching, so as to alleviate the negative effects brought by the high threshold.

3.4 single and fixed teaching mode, unbalanced ability training. At present, baseball teaching in colleges and universities is still based on the traditional mode of "teacher explanation demonstration student imitation". The classroom process is usually arranged as "rule teaching (about 20 minutes) - action demonstration (about 30 minutes) - repeated practice (about 40 minutes)" [12]. In this mode, students are mainly in a passive acceptance state, lacking opportunities for independent exploration, problem solving and tactical thinking. For example, in tactical teaching, teachers often directly tell students "The hitting strategy when the second base is occupied", rather than guide students to analyze the situation on the field, evaluate offensive and defensive variables and make plans independently. The result is that although students can remember the key points of tactics, it is difficult to apply them flexibly in actual competitions, and there is a significant gap between tactical understanding and implementation.

In addition, the traditional model overemphasizes skill training and ignores the cultivation of tactical understanding and team cooperation ability. Classroom training is mostly based on a single action, such as pitching, hitting or catching the ball. Students can complete basic actions under the guidance of teachers, but they lack the practice opportunity to adjust strategies according to the position of teammates and the defensive layout of opponents in team confrontation. Long term teaching in this way, some students present an embarrassing situation of "skills, but not

competition", that is, the technical movement is standardized, but the practical adaptability is insufficient, and they cannot make effective decision and cooperation in the dynamic competition environment.

The limitations of this teaching model are also reflected in learning motivation and participation. Due to the lack of independent design and decision-making, it is difficult for students to form an internal driving force for learning, lack of enthusiasm for classroom participation, and prone to distraction, negative practice and other phenomena. At the same time, the unified schedule of teaching arrangement is difficult to meet the student groups with obvious differences in basic level, zero basic students are difficult to keep up with the schedule, and students with good foundation are easy to feel bored due to repeated practice.

To sum up, the traditional "explanation demonstration imitation" mode has significant limitations in college baseball teaching, which not only restricts the cultivation of students' tactical thinking and team cooperation ability, but also affects classroom participation and learning effect. Therefore, it is urgent to explore the teaching innovation mode with students' autonomous learning, task driven and collaborative training as the core, so as to realize the synchronous improvement of skill training and tactical application, personal ability and team cooperation. Translated into English according to the English standard of academic papers.

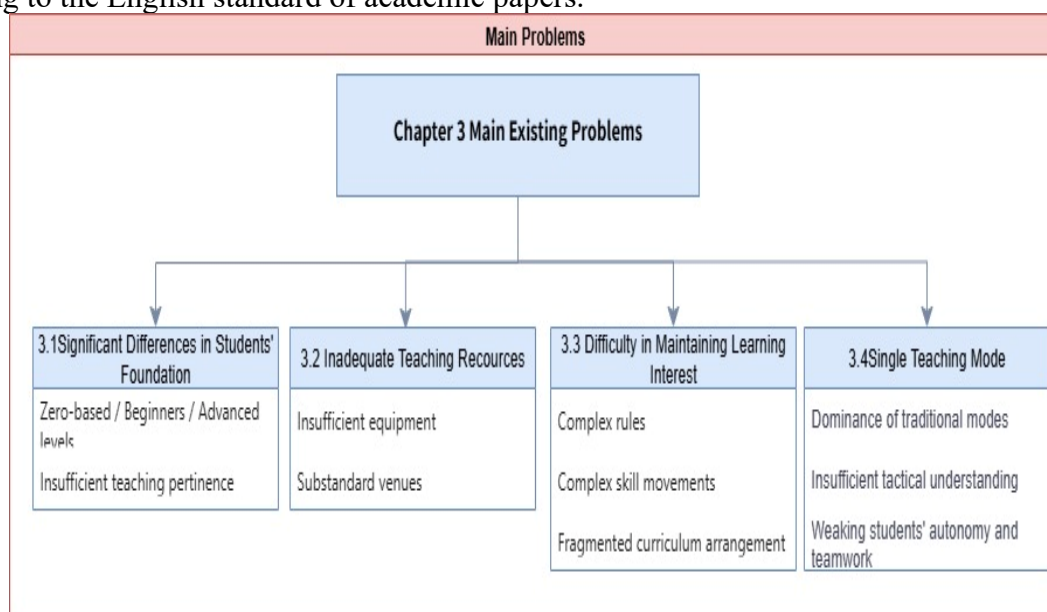


Figure 3. Framework Diagram of Major Issues in Baseball Learning

4.Exploration of baseball learning methods in Colleges and Universities

4.1 hierarchical learning method: accurately adapt to students' basic differences. Aiming at the problem of students' basic stratification, a "three-level and nine step" hierarchical learning system is constructed. According to the entrance test (rule cognition and basic action), students are divided into basic level, advanced level and promotion level, and each level is set with clear learning objectives and training content [13]. The basic level takes "interest cultivation+basic cognition" as the core, stimulates interest through the appreciation of baseball history stories and classic game clips, and simultaneously carries out basic movement training such as "holding the bat posture - standing posture adjustment - short distance passing". Each class is provided with a "movement breakthrough" link (such as completing the correct passing for three consecutive times to pass the pass), so as to help students build learning confidence; The advanced class focuses on "skill consolidation+simple tactics". On the basis of strengthening the training of pitching and hitting accuracy, simple tactics such as "batting coordination when first base is manned" and "double defensive position" are introduced to let students understand the roles and responsibilities in different scenes through "tactical cards"; With the goal of "actual combat capability+tactical innovation", the promotion level organizes 5v5 and 7v7 small-scale confrontation games, requiring

students to independently design tactics (such as "sacrificial touch" and "double kill cooperation") in the game, and analyze the effect of tactics execution through video playback after the game. In order to ensure the implementation of hierarchical teaching and establish a "tutorial system" counseling mechanism, each teacher is responsible for 15-20 students, and regularly carry out one-to-one skill guidance and learning planning adjustment.

4.2 situational teaching method: crack the limitation of practical training resources. Based on the realistic conditions of limited venues and equipment in Colleges and universities, the teaching mode of "micro situation full scene" can be designed to improve students' tactical application ability with the key scene of simulated competition as the core [14]. Among them, the "micro situation" training is designed for small reconstruction sites. For example, in a 20 m × 30 m court, high-frequency game situations such as "two outs with full bases" and "no one out with second base manned" can be simulated to clarify the roles of both sides of the offense and defense, including pitcher, catcher, batter and base runner. During the training, students need to complete the attack and defense conversion within a limited time. The teacher guides the action selection, tactical implementation and cooperation strategies through immediate comments, such as "the batter should give priority to push rather than pull", "the base runner should observe the catcher's passing rhythm to adjust the starting time", so as to help students understand the tactical intention and optimize the decision-making process. Micro situational training emphasizes improving students' observation ability, decision-making ability and cooperation level in a limited space, while reducing the impact of site limitations on teaching effect.

The "full scene" training uses multimedia and virtual simulation technology to make up for the shortage of the actual site. By watching professional game videos, such as the key situation of MLB (Major League Baseball), students analyze the batting order, base running strategy and defensive arrangement, and discuss the Tactics Selection and execution in different situations; At the same time, the virtual simulation software can simulate the changes of different field sizes, weather conditions and ball speed, so that students can carry out diversified tactical exercises on the computer side, and improve their adaptability to complex situations and strategic flexibility. The whole scene training emphasizes the combination of theoretical analysis and practical experience, so that students can fully understand the key points of tactics at the visual, thinking and operational levels.

The practice results show that the situational teaching mode can significantly improve the students' tactical understanding level, the accuracy of tactical implementation can be improved by 30% -40%, and the actual combat response ability is significantly enhanced. Through the organic combination of micro situation and the whole scene, it not only overcomes the constraints brought by the limited hardware resources, but also provides a systematic, operable and effective teaching strategy for college baseball teaching, which helps to achieve the synchronous improvement of tactical literacy and practical ability.

4.3 cooperative learning method: strengthen team cooperation and autonomous learning. Relying on the team attribute of baseball, we can build a cooperative learning mode with "group cooperation task driven" as the core, divide students into 4-6 teams, set up roles such as team leader, tactician and recorder in each group, and clarify the division of labor and responsibilities [15]. Classroom training is carried out around the "group task", and students are guided to organize and collaborate independently through the task objectives. For example, in the basic training stage, the group task can be set to "complete 10 successful passes and catches within 30 minutes". Students need to reasonably allocate practice time, adjust the rhythm of cooperation within the group, and continuously optimize the quality of action completion through self-feedback. In the tactical training stage, the group task can be designed as "developing the hitting tactics for the left hander". Students need to determine the hitting order, base running strategies and defensive countermeasures through discussion, and test the effect of the scheme in the simulated game.

In order to ensure the training effect, the feedback mechanism of "group mutual evaluation teacher comments" is introduced into the model. At the end of each class, each group should show the training results, and the other groups should score according to the dimensions of "cooperation

fluency", "tactical rationality" and "role participation". The teacher should make targeted summary and guidance based on the scoring situation, and point out the operation deficiencies and improvement direction. This feedback mechanism not only enhances students' cognition of training results, but also improves the interactivity and pertinence of learning.

Through this cooperative learning mode, students can gradually form a clear sense of responsibility and organizational ability in team cooperation, and cultivate the ability of independent planning, problem solving and tactical innovation. Research and practice show that some students actively organize group training after class, extend classroom learning time, and form a positive learning atmosphere. In addition, this model helps to make up for the differences in students' basic level, so that zero basic students can get the opportunity of guidance and imitation in the group. The medium-level students can improve their practical ability in cooperation, while the high-level students can strengthen their leadership and analysis ability by taking the role of tactical design and guidance, so as to achieve the unified goal of teaching students in accordance with their aptitude and full participation. On the whole, the cooperative learning mode of "group cooperation task driven" has strong practical value and promotion potential in college baseball teaching.

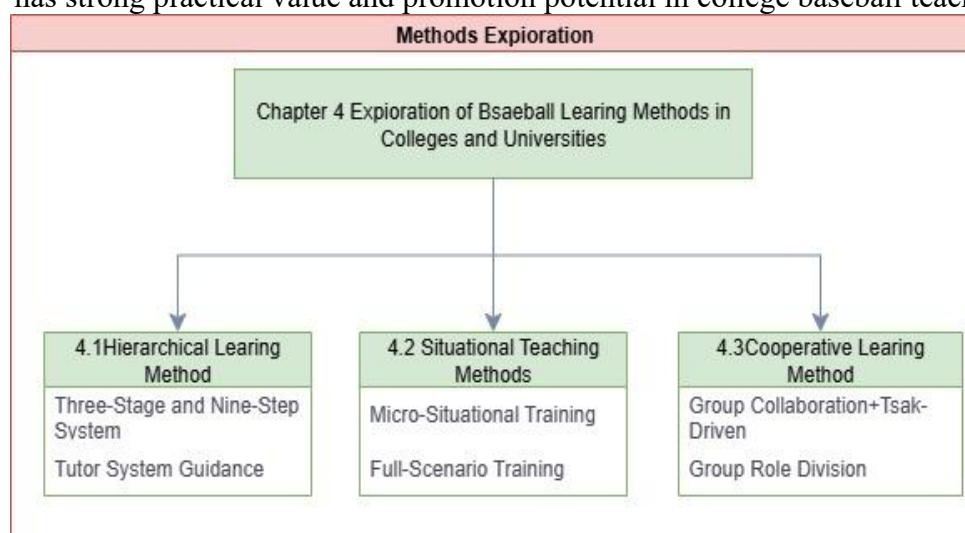


Figure 4. Baseball Learning Methodology Exploration Framework

5 conclusions and Prospects

5.1 research conclusion. Through the analysis of the current situation of baseball teaching in Colleges and universities and the exploration of learning methods, this paper draws the following conclusions: first, the current baseball teaching in Colleges and universities is faced with problems such as large differences in students' foundation, lack of teaching resources, low interest in learning, and single teaching mode. The core of these problems is the lack of appropriate learning methods, which leads to the lack of teaching pertinence and effectiveness; Second, hierarchical learning method, situational teaching method and cooperative learning method can effectively solve the above dilemma: hierarchical learning method solves the problem of "lack of teaching pertinence" by accurately matching the students' foundation; Situational teaching method relies on micro Situational Design and multimedia assistance, breaking through the limitations of venues and equipment on actual training; Through task driven and group cooperation, cooperative learning method stimulates students' learning initiative and strengthens the ability of team cooperation; Third, the three learning methods do not exist independently, but complement and cooperate with each other. Hierarchical learning is the basis, situational teaching is the carrier, and cooperative learning is the means, which together constitute a baseball learning method system suitable for the actual situation of colleges and universities in China.

5.2 future outlook. The development of baseball teaching in colleges and universities in the future should continue from the three dimensions of curriculum system, resource allocation and evaluation mechanism. In terms of curriculum system, we should build a progressive curriculum

chain of "basic courses - elective courses - school team training". Basic courses should popularize baseball culture and basic skills for all students, elective courses should focus on the improvement of special skills, and school team training should carry out competitive ability training for high-level students; At the same time, baseball is integrated with health education and mental health education, and characteristic modules such as "baseball+stress training" and "baseball+team cooperation" are developed to enrich the connotation of the course. In terms of resource allocation, we explored the "inter school cooperation+social linkage" mode, and many colleges and universities jointly built and shared baseball fields to reduce construction costs; Cooperate with local Baseball Clubs and sports enterprises, introduce professional coaches and equipment resources, and improve teaching professionalism. In terms of evaluation mechanism, the "process evaluation+multi-dimensional evaluation" system is established. The process evaluation covers classroom participation, the number of training clocks, and the quality of group task completion. The multi-dimensional evaluation includes four dimensions: skill level, tactical understanding, team cooperation, and learning attitude. Through the combination of student self-evaluation, peer mutual evaluation, and teacher evaluation, it comprehensively reflects students' learning outcomes.

With the deepening of the reform of physical education and the increase of students' demand for diversified physical education courses, baseball has broad prospects for development in colleges and universities. Through continuous optimization of learning methods and improvement of teaching system, baseball teaching can not only become an important part of college physical education curriculum, but also provide strong support for the cultivation of high-quality talents with team spirit, rule awareness and pressure resistance ability.

References

- [1] P. Ye: Proc. The 13th National Sports Science Conference—Written Exchange (Sports Training Branch) (Shandong Sport University, China 2023), p.64.
- [2] Y. Zhang: *New Sports*, Vol. (2022) No.12, p.25
- [3] X. Li: *Boxing and Fighting*, Vol. (2022) No.4, p.82.
- [4] Y. Yu and M. Lu: *Sporting Goods and Technology*, Vol. (2021) No.12, p.126.
- [5] Y.N. Qiao: *Research on the Current Situation and Countermeasures of the Development of the Chinese Baseball Association from the Perspective of Humanistic Spirit* (MS., Chengdu Sport University, China 2021), p.1.
- [6] T.T. Luo: *Research on the Current Situation and Countermeasures of the Development of College Baseball in China* (MS., Shanxi University, China 2020), p.1.
- [7] L.H. Gao: *Regional Governance*, Vol. (2019) No.30, p.145.
- [8] Y. Song: *The Transformation of Japanese Baseball Culture* (MS., Central China Normal University, China 2019), p.1.
- [9] S. Li: *Contemporary Sports Technology*, Vol. 9 (2019) No.8, p.81.
- [10] X.H. Liu: *Youth Sports*, Vol. (2019) No.2, p.120.
- [11] Z. Luo: *Contemporary Sports Technology*, Vol. 7 (2017) No.33, p.72.
- [12] G. Wang and J. Xie: *Chinese School Physical Education (Higher Education)*, Vol. 4 (2017) No.11, p.19.
- [13] H.B. Zhang: *Contemporary Sports Technology*, Vol. 7 (2017) No.19, p.136.
- [14] X.M. Chen: *Sports Science and Technology*, Vol. 37 (2016) No.2, p.26.
- [15] Z.B. Li: *Sports Science and Technology*, Vol. 36 (2015) No.3, p.138.