

Basketball Coaching and Team Performance in Selected Universities in Hunan China

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Abstract: Basketball is the most popular sport on university campuses. Various competitions are in full swing. However, in the college representative teams of the Super League, except for a few externally hired professional coaches, most of the coaches are held by physical education teachers in the school. How to express excellence in a team, how to integrate the coaches' ideology, tactical awareness, style, and personality charm with the players, and how to organically combine the campus culture of a university with the construction and cultivation of a team are all key factors that reflect the level of coaching skills of a college basketball coach. This article studies the coaching ability of basketball coaches in some universities in Hunan Province, and analyzes the impact of basketball coach leadership behavior on athletes' sports performance through a survey questionnaire.

1. Introduction

With the vigorous development of basketball, especially under the promotion of new basketball concepts, basketball in some universities in Hunan Province has also received more attention. Therefore, in the new era, it is necessary to explore the construction and reform of college basketball in accordance with the basic development situation of college basketball and the practical needs of comprehensively promoting the development of basketball, in order to ensure the continuous improvement of the influence of college basketball and create a good environment for the development of basketball industry.

Many scholars have proposed the research on the coaching ability of basketball coaches. Darya M H conducted exams for players from 20 relevant colleges in Sukkur and 20 different teaching

departments at Halpur University, which allowed students to evaluate the effectiveness of game strategies through coach effectiveness and vote. The data showed that popular democratic coaches had a positive impact on game strategies. This discovery was conducive to the establishment of sports programs in universities [1]. Santos F explored and expanded the concept and organization of coach training plans and interventions. In the training plan for the positive growth of young athletes, it was recommended to include school physical education teachers, parents, etc., in the training process, and trained them to have the ability to grow positively. The implementation of its project would help researchers better understand the sustainable development of adolescent positive development [2]. Bolen J B conducted a study on the efficiency of men's college basketball based on data envelopment analysis. He measured the input of team talent, academic ability, and experience, as well as the basketball specific expenditure of the project, as well as the ability and experience of coaches, and ranked them based on technical efficiency. These metrics helped determine the status of other projects across the country [3]. Although the above literature perfected the research on teaching ability, there was little discussion on a comprehensive overview of coaching ability.

This article would analyze basketball related knowledge and investigate the impact of coach behavior on athletes through questionnaires.

2. Assessment of Basketball Coaches and Their Coaching Abilities

2.1. Coaches

The term “coach” first emerged in the early 1970s in the United States as a new and efficient management method derived from disciplines such as sports psychology and pedagogy. However, the “coach” industry has a long history. For example, in ancient Greece, there were “coaches” in sports such as fencing and wrestling, as well as “coaches” in China such as dragon boat and polo. Since then, the coaching industry has put on a layer of professional clothing. With the development of the times and the continuous deepening of sports, the requirements for coaches are also increasing [5]. However, fundamentally, the social roles and responsibilities of coaches have not changed. Coaches are always the guide of training, the shaper of athletes, the organizer and manager of teaching and training. The role of coaches is to constantly create better performance and lead the development of sports projects [6].

The training of basketball is a special job, while basketball coaches are a special job. Their work goals are athletes, and their work process is to shape basketball players. Their work results mainly focus on the achievements of athletes in the game, which is the overall behavior of people. Therefore, their work has obvious professional characteristics [7]. This is because athletes are complex creatures whose physical, technical, physical, psychological, and intellectual abilities are undergoing changes [8]. At the same time, the process of training and competition itself also has dynamic, complex, and diverse characteristics, which requires coaches to be able to make timely and flexible changes in the face of changing training and competition situations. So, the teaching characteristics of basketball coaches in some universities in Hunan Province are very personalized and diverse. Basketball coaches are leaders and managers of team organizations. They perform the functions of planning, organizing, leading, and controlling through their own actions. They are the people who make training plans. Coaches provide technical, tactical, physical, psychological, intellectual, and other training for team members. At the same time, they are also regulators of the entire game and can make appropriate technical, tactical, and personnel adjustments to the situation on the field at any time. [9].

In order for basketball coaches to play a greater role in competitive sports, they are required to have higher comprehensive quality and stronger professional sports quality [10]. The coach is the

core of a team and plays an important role in the team. The strengthening of guidance on the construction of basketball coaches in Chinese universities is of great significance for improving the quality of basketball teaching in universities and promoting the development of basketball teaching in universities. The qualities that modern basketball coaches must possess are shown in Figure 1.

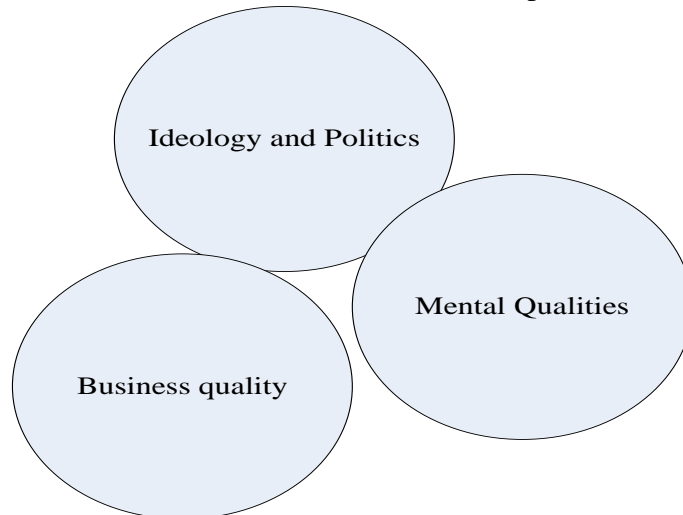


Figure 1. Necessary qualities of coaches

(1) Qualified ideological and political

The political literacy of coaches refers to the fact that coaches must have a good political position and moral literacy, and a strong sense of social responsibility. Coaches must have a certain degree of political ideology and ability to deeply understand the political situation of the country and society. Coaches must maintain a correct stance on major issues and strictly abide by laws, regulations, and ethical norms [11]. At the same time, coaches should also have strong organizational, communication, and coordination skills, and be able to effectively organize training activities, so as to timely grasp various situations that may occur during training, and ensure the smooth implementation of training work.

(2) Reasonable business literacy

Coaches should have a solid professional foundation. They should not only have a certain understanding of their work, but also master knowledge about sports science, psychology, sociology, education, and other aspects. They should have a comprehensive and in-depth thinking ability, which can help students better understand sports and master sports skills, so as to improve their training level [12].

(3) Good psychological quality

Coaches must have good psychological qualities. That is to say, they can maintain calm under high pressure and maintain mental focus, so as to be able to effectively handle problems. Coaches should also have a strong sense of responsibility, and be able to maintain a positive attitude in their work, so as to learn to respect and understand others and have a team spirit [13]. In addition, coaches should also have a strong ability to resist setbacks and be able to effectively regulate their emotions and pressures in order to better respond to the challenges and problems they face at work.

2.2. Basketball

Since the introduction of basketball to China in 1895, people have actively participated in, popularized, developed, and progressed, and continuously promoted the development and innovation of basketball culture [14]. At the beginning of its introduction, people only regarded it as

a purely cultural and recreational activity. However, after a period of development, basketball has gradually developed into a cultural activity with fitness and emotional expression. Over time, basketball has gradually evolved into a special competitive event and gradually been absorbed by universities. Under the premise of the people's concern and love for basketball, it also nurtured the national basketball culture. In other words, basketball culture emerged with the development of basketball. In its dissemination and development, it presents a stage of popularization, development and maturity.

Related tactics in basketball training:

(1) Mobile offensive tactics

In the process of using this technology, it has a high degree of flexibility and can quickly and effectively complete a variety of actions, such as shooting, dribbling, passing, defense, and so on. Moreover, its variability can be difficult for defenders to detect in basketball games. This technique can help athletes cope with competitions more flexibly, and can make competitions more interesting and challenging.

(2) Man to man defense tactics

This tactic refers to the fact that during the defensive process, everyone should focus on their own position and closely defend the enemy. During this process, each person can only target one opponent and cannot move to another position, otherwise the other party would have an opportunity to take advantage of it. Therefore, athletes should continuously strengthen their defensive abilities and ensure that they always maintain a high degree of vigilance to prevent the enemy from having the opportunity to attack.

The value of basketball culture

From the perspective of the new basketball concept, an in-depth analysis was conducted on the construction and development value of basketball culture in some universities in Hunan Province. Under the new historical conditions, in order to comprehensively improve the construction effectiveness of college basketball culture, it is necessary to analyze its cultural value, so as to determine the main construction and development direction of college basketball culture. On this basis, a more complete basketball cultural system has been constructed [15].

(1) Fitness value

Fitness value is one of the most fundamental values of college basketball, which can bring students a healthy physique and also lay the foundation for the development of basketball culture in some universities in Hunan Province. In college basketball culture, fitness value is the most obvious manifestation. It not only improves students' physical fitness, but also promotes their healthy lifestyle, and cultivates their good sports habits, so as to form a healthy sports culture [16].

(2) Intellectual and educational function

In an important basketball game, coaches and athletes from both sides need to brainstorm and develop more effective plans and strategies to improve the level of the game. To achieve good results, coaches from both sides need to carefully study the competition rules before the competition, and deeply understand the characteristics of the opponent, so as to fully exert their own advantages during the competition [17]. Athletes from both sides should always remain focused and do every detail well, so as to play to their best level on the field.

(3) The enhancement of students' social adaptability

Basketball players, based on the limitations of competition rules and their love for basketball, can strengthen their own lives, thereby improving their personal qualities and continuously improving their abilities, thus making their social life more complete and rich. In competitions, basketball players need to have good psychological qualities to cope with various challenges and difficulties, and better develop their personal potential, so as to be able to win in competitions [18].

2.3. Training Quality

There are seven research methods for the evaluation index system of training quality: literature review, expert interview, questionnaire survey, Delphi method, mathematical statistics, analytic hierarchy process, and fuzzy comprehensive evaluation.

2.4. Strategies for Improving the Teaching Ability of Basketball Coaches in Some Universities in Hunan Province

(1) Improving the coaching ability of basketball coaches through the improvement of basic literacy

Firstly, it is necessary to understand the technical characteristics of team members, especially the technical application of basketball players in competitions; secondly, it is necessary to understand the personality characteristics of team members, such as whether they are introverted or extroverted, conservative or radical, and so on; finally, it is necessary to understand the basketball skills and technical characteristics of players, such as the position, passing, defense, and other aspects of the field. This would help coaches better understand and master the characteristics of their players, thereby better guiding the game.

(2) Improving the coaching ability of basketball coaches by improving their command and analysis abilities

First of all, pre competition preparations are very important. Before the game, it is necessary to make sufficient preparations to ensure that the strength can be fully utilized during the game. Video playback can help athletes better understand their opponents and analyze their technical characteristics to determine their strengths and weaknesses. In addition, coaches should also be arranged for training before competitions to help athletes better master competition skills and predict possible situations during competitions.

(3) Improving the coaching ability of basketball coaches through the improvement of on-site command ability

Command during the opening stage: In basketball games, the game rule of four quarters with twelve points or 20 points in the upper and lower half is usually adopted. Each section is scored by both sides with three points, and the two sections add up to ten points. Each half is scored by both sides with a total of six points, and the two sections add up to twenty points. In the command of the opening stage, athletes from both sides should pay attention to the rational distribution of physical strength and timely grasp the situation on the field to maintain balance on the field. At the same time, athletes should also pay attention to the observation of defensive players and the formulation of defensive strategies in order to make timely and effective responses.

3. Impact of the Coaching Ability of Basketball Coaches on Athletes

3.1. Investigation Methods

1) Sports performance scale: Referring to the research results of Hrysomallis and Wilson on sports performance, the 5-point Likert scale was used to measure athletes' sports performance based on their technical performance and psychological emotions. The higher the score, the better the athlete's athletic performance.

2) Coach leadership behavior scale: This article conducted a research on Gao Yuanyuan's Leadership Scale for Sport (LSS) and reviewed it. The research results showed that the leadership behavior of physical education teachers had strong autonomy, democracy, training, social support, and positive feedback.

3.2. Questionnaire Survey

The first question is about the personal data of the subjects, such as gender, age, and training time; the second is the leadership behavior of coaches (autocracy, democracy, training, social support, positive feedback, etc.), as well as the psychological preparation, sports anxiety, sports performance, etc. of athletes. The exam questions are based on Likert's 5-point scale, with 1-5 meaning "very disapproval", "disapproval", "average", "agree", and "very agree".

When developing the questionnaire, the relevant scales were modified accordingly, and the use of vocabulary was contextualized to meet the needs of researchers. In order to better ensure the scientific and practical nature of the scale, this experiment conducted in-depth interviews with the scale. On this basis, it was revised and the basic requirements for the scale were finally determined. The preparation of the questionnaire was completed. By taking a physical education school in an ordinary university in Hunan Province as an example, a field survey was conducted by filling out the questionnaire. A total of 100 students were sent out, and 96 valid students were recovered, with a total effective rate of 96%. In this process, it was necessary to modify the content of items whose semantics were unclear or difficult to understand. Finally, there were a total of 27 items in the questionnaire.

3.3. Survey Data Evaluation

Table 1. Standard deviation of variables

			Autocratic leadership behavior	Democratic leadership behavior	Training to guide behavior	Social support behaviors	Positive feedback behavior	Mental Preparation
Variables	Standard Deviation							
Autocratic leadership behavior	4.66	0.57	0.743					
Democratic leadership behavior	4.84	0.53	0.193	0.806				
Training to guide behavior	4.48	0.62	0.061	0.112	0.763			
Social support behaviors	4.22	0.73	0.181	0.153	0.163	0.787		
Positive feedback behavior	4.6	0.8	0.115	0.256	0.209	0.163	0.845	
Mental Preparation	4.26	0.65	0.143	0.223	0.141	0.255	0.162	0.656
Exercise anxiety	1.73	0.61	0.164	-0.067	-0.017	-0.089	-0.071	-0.083
Sports Performance	4.32	0.85	0.292	0.265	0.165	0.211	0.266	0.195

As could be seen from Table 1, the correlation coefficient of each variable was small. That is to say, there was no linear relationship between the variables, thus ensuring that regression analysis could be conducted. The independent variable of "autocratic leadership behavior" was represented

by x_1 ; the independent variable of “democratic leadership behavior” was x_2 ; the independent variable of “training guidance behavior” was x_3 ; the independent variable of “social support behavior” was represented by x_4 ; the independent variable of “positive feedback behavior” was x_5 ; the independent variable of “psychological preparation” was x_6 ; the independent variable of “exercise anxiety” was x_7 ; the independent variable of “motor performance” was represented by x_8 ;

It is assumed that H_0 refers to $P_i=0$. That is to say, the i th independent variable x_i has no linear relationship with the dependent variable y . Multilinear regression is still estimated using the least square method. The formula is as follows:

$$\min f(\bar{p}_1, \bar{p}_2, \dots, \bar{p}_8) = \min \sum_1^8 (y_i - \bar{y}_i)^2 \tag{1}$$

The least square method is to minimize the sum of the quadratic distances between dependent variables. The formula is constructed based on the estimated parameters, and the formula is as follows:

$$\left. \frac{\partial f}{\partial P} \right|_{P_0 = \bar{P}_0} = 0 \tag{2}$$

.....

$$\left. \frac{\partial f}{\partial P} \right|_{P_8 = \bar{P}_8} = 0 \tag{3}$$

Table 2. Results of multiple hierarchical regression analysis

Paths	Impact Effect	Upper limit	Lower limit	Test results
Autocratic leadership → Movement performance	0.2021	0.1197	0.3511	Established
Democratic leadership → Movement performance	0.3048	0.19	0.4311	Established
Training guidance → Sports performance	0.3077	0.0981	0.3171	Established
Social support → sports performance	0.133	0.036	0.2501	Established
Positive feedback → sports performance	0.1817	0.0873	0.2571	Established

The results of Table 2 showed that the larger the effect value, the greater the impact of a certain behavior of a coach on the performance of athletes. From Table 1, it could be seen that 0.3077 was the maximum value. Therefore, compared to autocracy, social support, and positive feedback, training guidance behavior had a significant positive impact on athletes’ behavior.

4. Conclusions

The competitive level of athletes is influenced by many objective factors. Among them, the most important is the teaching and training skills of coaches. In a sense, it can be seen how important and necessary it is to improve the teaching and training skills of basketball coaches. Therefore, in order to truly improve the level of teaching and training skills of basketball coaches, it is first necessary to be familiar with and master the concepts and classification principles of teaching and training skills of basketball coaches. These concepts and classification principles refer to various knowledge, skills, strategies, etc. involved in basketball teaching and training, which provide basketball coaches with scientific theoretical basis, so as to maximize their teaching and training skills.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

References

- [1] Darya M H, Khaskheli N A, Somro J A. *Effect of Democratic Coaching Style on the Game Strategy of Badminton Players, at Region, Sukkur-Sindh. Sir Syed Journal of Education & Social Research (SJESR), 2021, 4(1):398-404.*
- [2] Santos F, Gould D, Strachan L. *Research on Positive Youth Development-focused Coach Education Programs: Future Pathways and Applications. International Sport Coaching Journal, 2019, 6(1):132-138.*
- [3] Bolen J B, Rezek J, Pitts J D. *Performance Efficiency in NCAA Basketball. Journal of Sports Economics, 2019, 20(2):218-241.*
- [4] Koschmann A. *How Coaching Ability Moderates Player Incentives to Perform: A Hierarchical Bayesian Approach of the NFL. Journal of Sport Management, 2019, 33(4):331-342.*
- [5] Shimazaki T, Taniguchi H, Kikkawa M. *Gender- and Age-Group Differences in the Effect of Perceived Nonverbal Communication on Communication Ability and Coaching Evaluation in Japanese Student Athletes. International Journal of Sport Communication, 2021, 14(3):379-397.*
- [6] Dray K, Howells K. *Exploring the Use of E-Portfolios in Higher Education Coaching Programs. International Sport Coaching Journal, 2019, 6(3):359-365.*
- [7] Rudnick M, Wallace B. *Ankle Support Beliefs of High School Basketball Coaches and the Ankle Support Practices of their Athletes. International Sport Coaching Journal, 2021, 8(2):1-6.*
- [8] Syaukani A A, Subekti N, Sudarmanto E. *Determining Physical Fitness for PPLOP Basketball Athletes in Central Java using Sport-specific Test and Measurement. JUARA Jurnal Olahraga, 2020, 5(1):66-74.*
- [9] Keefer Q. *Sex Differences in High-Level Managerial Jobs: Evidence From Professional Basketball. Journal of Sports Economics, 2022, 23(3):301-328.*

- [10] Siregar N P, Santosa S, Arfian N. Pengaruh Latihan Keseimbangan Metode Vladimir Janda Terhadap Risiko Cedera Olahraga Basket Pada Pelajar Laki-Laki Smp Negeri 15 Medan. *Jurnal Penelitian Kesmasy*, 2019, 1(2):16-22.
- [11] Darisman E K, Suharti S. Pengaruh Pola Pelatih Kooperatif Terhadap Motivasi Berprestasi Atlet Bola Basket Putri Sma 17 Agustus 1945 Surabaya. *Jorpres (Jurnal Olahraga Prestasi)*, 2019, 13(2):118-127.
- [12] Smith S, Cotterill S T, Brown H. An Interpretative Phenomenological Analysis of Coach Perceptions in the Practice Environment. *Sport Psychologist*, 2020, 34(4):257-267.
- [13] Luiggi, Griffet. Sport injury prevalence and risk by level of play and sports played among a representative population of French adolescents. A school-based study.. *Revue d'epidemiologie et de sante publique*, 2019, 67(6):383-391.
- [14] Tolentino A. Coaching Competence Of Public School Teachers: An Input To Student-Athlete Performance. *International Journal of Advanced Research*, 2020, 8(10):1092-1102.
- [15] Kao S F, Tsai C Y, Schinke R. Investigation of the interaction between coach transformational leadership and coaching competency change over time:. *International Journal of Sports Science & Coaching*, 2021, 16(1):44-53.
- [16] Ji E H, Choi J S, Yong S Y. An Exploration on Establishment of School Sports Operation Regulations: Focus on the Case of Basketball in the United States. *Journal of Korean Society for the Study of Physical Education*, 2021, 26(1):145-163.
- [17] Meszler B, M Váci. Effects of short-term in-season plyometric training in adolescent female basketball players. *Physiology International*, 2019, 106(2):168-179.
- [18] Sheng Y L, Feng Y F, Wang L C. Analysis of the relationship between the basketball coach's leadership style and the training management of student-athletes. *Korean Journal of Youth Studies*, 2019, 26(12):487-515.