



## A Development of the Evaluation Indicator for the Sustainable Development of Elementary School Basketball in Anhui Province

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### Abstract

**Background and Aim:** School basketball in Anhui Province is one of the earliest provinces approved by the Ministry of Education. Given the important role of school basketball in Anhui Province in the reform of physical education and the fundamental role of school basketball in the selection of competitive basketball reserves, it is crucial to guide the scientific and sustainable development of school basketball in Anhui Province. Thus, the research aimed to develop a comprehensive and scientific evaluation indicator system for the sustainable development of school basketball in Anhui Province.

**Materials and Methods:** The main research instrument of this research was expert questionnaires. The population is 31 experts. The Delphi technique was used to select 19 experts in the field of school basketball to determine the final indicator system. Using the AHP method, the researchers calculated the weights for each indicator in the evaluation indicator system based on the experts' judgments. This process contributed to an objective and quantitative determination of the indicators' importance.

**Results:** The scientificity and applicability of the research process and results were validated through a focus group. Data analysis uses the mean, standard deviation, coefficient of variation, frequency statistics, and Kendall's concordance coefficient test work. The research determined the evaluation indicator system through two rounds of expert consultation, resulting in four first-level indicators, 11 second-level indicators, and 35 third-level indicators. In this research, the hierarchical analysis method (AHP) was used to determine the weights of the indicators at all levels. The research findings indicated that the developed evaluation indicator system received recognition and support from the experts in terms of its scientificity, rationality of evaluation standards, and comprehensiveness.

**Conclusion:** The system provided an effective evaluation tool for assessing the sustainable development of school basketball in Anhui Province, guiding relevant decision-making processes, and offering reference points for improvements.

**Keywords:** School Basketball; Sustainable Development; Evaluation Indicator

### Introduction

In 1895, basketball was introduced to Tianjin, China, and then it was carried out in youth organizations and schools in cities such as Tianjin, Shanghai, and Beijing (Sun, 2004). The development of Chinese basketball began in schools, and Chinese basketball has an inseparable relationship with school basketball. (Yue and Wang, 2004).

School basketball has been in China for a hundred years, and it has been promoting the development of Chinese basketball. A century of vicissitudes, Timeless. In the new century, under the background of the new era of comprehensively deepening the reform of the sports system, school basketball has also entered a new period of historical development. In 2016, the General Office of the Ministry of Education issued the "Notice of the General Office of the Ministry of Education on the



Promotion of School Basketball Pilot Work" and decided to carry out the school basketball promotion pilot work in 2016. (The General Office of the Ministry of Education, 2016) This event marks a new starting point for the comprehensive development of school basketball in the context of the new era.

Sustainable development is a new development model for human survival and the creation of a new civilization. All development, including sports, must follow the path of sustainable development. (Wang, J.L., & Zhao, C.Z., 1998). In the field of basketball research, Chinese scholar Chen Jun (2001) took the lead in using the sustainable development theory to study the sustainable development strategy of Chinese basketball professionalization. Zhang, S.Q. (2006) studied the theory of sustainable development of basketball in my country based on predecessors' research, summarized the concept and meaning of sustainable development of basketball, and proposed the composition of a sustainable development system for basketball.

School basketball in Anhui Province is one of the earliest provinces approved by the Ministry of Education. Given the important role of school basketball in Anhui Province in the reform of physical education and the fundamental role of school basketball in the selection of competitive basketball reserves, it is crucial to guide the scientific and sustainable development of school basketball in Anhui Province.

Therefore, a scientific evaluation indicator system for the sustainable development of school basketball is particularly important as the orientation of the sustainable development of school basketball. Because evaluation is one of the most extensive and common activities in human social and economic activities, without evaluation, human beings cannot make effective decisions. The development of physical education is inseparable from sports evaluation. (Tang and Cai, 2011) . In the same way, the development of school basketball will lose its direction without evaluation.

## Objectives

This research aims to develop the evaluation indicator system for the sustainable development of Elementary School Basketball in Anhui Province, China.

## Literature Review

This research mainly focuses on Sustainable Development and School Basketball. The following literature and research will be reviewed in Sustainable Development and School Basketball Sections as follows:

### 1. Analysis of Sustainable Development Theory

#### 1.1 The Formation History of "Sustainable Development"

Countries in the world led by Western countries are stepping forward to realize industrialization, and the economy has entered the "fast lane", created a large amount of material wealth, and achieved unprecedented economic prosperity, in modern society since the 20th century. However, behind the prosperity, this traditional development is exposed. The disadvantages of the model, such as the depletion of natural resources, environmental pollution, ecological damage, and the gap between the rich and the poor, are becoming increasingly serious. (Zeng, Z. X., & Gu, P. L., 2000) In this context, human beings realize that exchanging resources for economic growth is not a long-term solution, and have to seriously think about how we should develop. (Zeng, Z. X., & Gu, P. L., 2000) As a result, the



theory and practice of sustainable development came into being and became the consensus of human beings worldwide.

Combining the views of foreign scholars Mebratu (1998), the formation process of sustainable development theory is divided into three stages: ① the origin of sustainable development theory (before the Stockholm period, before 1972); ② the establishment of sustainable development theory (from Stockholm to WCED period, 1972-1987); ③ the application and practice of sustainable development theory (post-WCED period, 1987-present).

The theory of sustainable development (Zeng, Z. X., & Gu, P. L., 2000) has gone from germination to establishment to application and practice, and the research perspective has changed from a single focus on the ecological environment to multi-dimensional perspectives such as society, economy, industry, agriculture, urban planning, and regional development. After decades, although the road is difficult and the process is tortuous, the result is developing in the right direction. The theory of sustainable development has gradually become a development concept with rich connotations, profound significance, and great practical significance. "Sustainable development" must leave a strong mark in the history of human development. Indeed, the development process of everything in the world will not be smooth, and there will always be problems of one kind or another, and sustainable development is no exception. This requires researchers to continuously improve the sustainable development theory in the process of practical application.

## 1.2 Sustainable Development of Sports

Sustainable development is the target model of global development in today's society, and the development of sports is no exception. (Wang, J.L., & Zhao, C.Z., (1998).)

According to Liu's (2008) point of view on the research level of sustainable development, the research on the sustainable development of sports is divided into research on the macro level, research on the meso level, and research on the micro level.

The research on the theory and applied theory of sustainable sports development at the macro level is the starting point for Chinese scholars to study the sustainable development of sports in the early stage. Chinese scholars have made fruitful achievements in basic theories such as the concept, connotation, influencing factors, and development strategies of sports sustainable development, but there are few achievements in applied theory and practice of sports sustainable development, which need to be further strengthened. (Liu, W., 2008)

Scholars (Liu, C. M., Yu, C. G., Liu, W., Ding, H. Y., Ding, Y. H., & Lu, L., 2002) at the mesoscopic level have produced a lot of research results and in-depth theoretical analysis, especially the "sustainable development of competitive sports". Although the theoretical research on the sustainable development of competitive sports has different research angles, they all agree that Chinese competitive sports must take the road to sustainable development. There are many studies on the "evaluation of sustainable development of sports" at the mesoscopic level, such as the "evaluation indicator of sustainable development of competitive sports", which has not reached a unified research paradigm, but it also provides us with a preliminary research basis for exploring the sustainable development evaluation of competitive sports.

Research on the sustainable development of sports at the micro level involves many sports events. Scholars (Chen, J., 2001; Zhang, S.Q., 2006) have deeply discussed the sustainable development theory of each sports event in combination with the characteristics of sports events, and put forward



strategies and suggestions for the sustainable development of the event based on their theories. Some sports events have established a sustainable evaluation system.

However, there is a "freezing point" of research, such as the evaluation system for the sustainable development of basketball. Judging from the literature collected so far, there are few studies in this area. For many Olympic sports, there are still many "blind spots" in the research listed above at the micro level, and scholars have not paid attention to the importance of their sustainable development.

## 2. School Basketball Research

The volume of research papers on "school basketball" is generally on the rise, and the emphasis on school basketball at the national level has aroused researchers' attention to school basketball. The hot issues of domestic school basketball research include research on the Chinese University Basketball League (CUBA); research on school basketball teaching; research on school basketball culture; and research on school basketball development. In addition, the research on the sustainable development of school basketball has gradually attracted the attention of researchers. (Chen, J.,2001; Zhang, S.Q.,2006)

However, judging from the existing literature, the research on school basketball still has the following problems:

(1) For the research on the sustainable development of the Chinese University Basketball Association (CUBA), most of them focus on the research paradigm of "status-problem-countermeasures", and seldom CUBA sustainable development evaluation research. (Liu, Q. G., Xu, Y., & Zhi, W. B.,2020)

(2) Research related to school basketball teaching mainly focuses on college and middle school basketball teaching issues, with little research on primary school teaching; more attention is paid to college school basketball culture research, but insufficient research on basketball culture for teenagers, especially children.

(3) Research on the development of school basketball is mostly based on research paradigms such as theoretical basis analysis, status quo-problems-countermeasures, and evaluation of schools with school basketball characteristics. (Chen, J.,2001; Zhang, S.Q.,2006)

The evaluation research involved is mainly based on the evaluation of school basketball characteristics schools. Few research literature regard school basketball as a complex system and use a systematic method to construct the structure and evaluation of a school basketball sustainable development system.

Therefore, in response to the above problems, this study constructs an evaluation indicator system for the sustainable development of elementary school basketball in a systematic way, and diagnoses and gives feedback on school basketball, thereby promoting the healthy and sustainable development of school basketball.



## Conceptual Framework

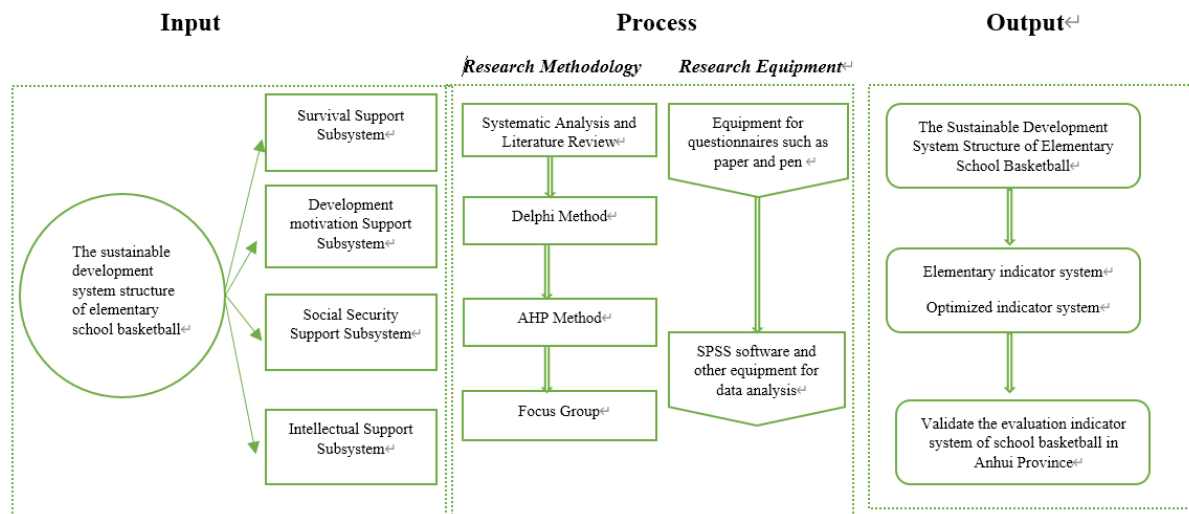


Figure 1 Conceptual Framework

## Methodology

**Population and sample:** The sample specification of this research was 31 persons, including experts in pedagogy, and school physical education, experts in the field of basketball, school basketball administrators, and school basketball stakeholders.

### 1. Identification of Experts

1.1 Select 5 senior scholars of school basketball research and senior basketball teachers in colleges and universities to conduct in-depth interviews for expert consensus on the validity of indicators. Find the IOC value.

1.2 Experts to consensus on the key indicators were 19 persons who were senior scholars of school basketball research, senior basketball teachers in colleges and universities, provincial and municipal school basketball managers, principals of elementary schools with basketball characteristics, and basketball teachers of elementary schools with basketball characteristics.

1.3 Select 7 senior basketball teachers from colleges and universities, school basketball managers, basketball teachers, or coach education experts from elementary schools with school basketball characteristics, and conduct focus group discussions.

**2. Sampling Techniques:** In this research, the method of purposeful sampling was used to select experts.

### Data collection

1. The IOC questionnaire of 5 experts is used to obtain the IOC value. The item-objective Congruence (IOC) value for the 53 evaluation items in this study is 0.89, which falls within the range of 0.8 to 1, indicating a relatively high value.

2. Cronbach's alpha expert survey scale of 30 Stakeholders of school basketball, the reliability of the questionnaire was analyzed by Cronbach's alpha coefficient, which has been proven to be an effective indicator for testing the reliability of multi-dimensional scales. Cronbach's alpha  $\geq .7$  was considered acceptable reliability. (Wan Yu, 2015) There were a total of 51 indicators across the first-level, second-level, and third-level indicators. The Cronbach's alpha coefficient for these 53 indicators





was 0.909, indicating that the developed indicator questionnaire had a high level of internal consistency overall.

3. Using the Delphi method, the expert questionnaire consultation form was distributed to 19 experts in the form of online mail, and two rounds of questionnaires were distributed and recovered.

**Data Analysis:** This research mainly used SPSS software to analyze the data. Statistics use the mean, standard deviation, coefficient of variation, frequency statistics, and Kendall's concordance coefficient test work. Data processing of analytic hierarchy process Use software to check and calculate the weight and consistency of each indicator.

## Results

This research uses a multi-method and it has developed a set of detailed and comprehensive evaluation indicators system for evaluating the level of sustainable development for elementary school basketball in Anhui Province.

A systematic approach was employed to understand the essence of sustainable development in school basketball. Building upon this understanding, four fundamental supporting subsystems were formulated: Survival Support, Development Motivation Support, Social Security Support, and Intellectual Support. Through two rounds of Delphi expert consultation, the evaluation indicator system was improved, and 4 first-level indicators, 11 second-level indicators, and 35 third-level indicators were finalized. The researchers used the AHP method to calculate the weights of the indicators in the evaluation index system based on the expert's judgment. This process helped to objectively and quantitatively determine the importance of the indicators.

On this basis, the researchers developed the Evaluation Scale of Sustainable Development for Elementary School Basketball in Anhui Province. The detailed analysis results are as follows:

### 1. Preliminary Construction and Determination of the Evaluation Indicator System for Sustainable Development of Elementary School Basketball in Anhui Province

Based on the evaluation dimensions and system structure for the sustainable development of school basketball in Anhui Province, and through a comprehensive review of relevant literature, the indicators with a higher frequency of usage were selected. Using the "target tree" analysis method, combined with the results of expert interviews, a preliminary sustainable development indicator system for school basketball in Anhui Province was developed. The system comprises 4 Level 1 indicators, 11 Level 2 indicators, and 38 Level 3 indicators.

The final evaluation indicator system for sustainable development of school basketball in Anhui Province was established through two rounds of Delphi expert surveys, analysis of feedback, and screening based on mathematical statistics. The system consists of 4 Level 1 indicators, 11 Level 2 indicators, and 35 Level 3 indicators. The specific content of the indicator system is presented in Table 1.

Table 1 Evaluation Indicator System for Sustainable Development of Elementary School Basketball



in Anhui Province (Final Draft)

Overall Target Layer	Level 1 indicators	Level 2 indicators	Level 3 indicators
Evaluation Indicators System for the Sustainable Development of Elementary School Basketball in Anhui Province	A. Survival Support Subsystem	A1 Basic Resources	A11 Basketball Teacher Compliance Rate
			A12 Basketball Court Compliance Rate
			A13 Amount of Special Funds for School Basketball Work
			A14 School Basketball Population Ratio
			A21 Basketball Class Hours Per Semester
			A22 School Basketball Cultural Activities
			A23 Provides Basketball Professional Guidance and Service Frequency After Class
			A31 Existence of School-level Male and Female Basketball Teams
			A32 Establishment of Class, Grade, or School-level Basketball Teams or Clubs
			A33 Training Hours Per Week
	B. Development Motivation Support Subsystem	A3 Training and Competition	A34 School Basketball Teaching and Training Plan
			A35 Compliance Rate of Intra-School Basketball Competitions per Semester
			A36 Participation Rate in Out-of-School Basketball Competitions per Academic Year
		B1 Subject's Emphasis and Satisfaction	B11 Parental Satisfaction with School Basketball
			B12 School Importance Given to School Basketball
			B13 Physical Education Teacher Salary Satisfaction
			B21 Implementation of National Policies
		B2 Policy Support	



Overall Target Layer	Level 1 indicators	Level 2 indicators	Level 3 indicators
			B22 Incorporated into the Development Plan B23 Improving Rules and Regulations B31 Number of Schools with Basketball Characteristics B32 Proportion of Basketball Teachers with Coaching Certificates B33 Registered Number of Elementary School Basketball Players B34 Guarantee Level of School Basketball Competition C11 Support from Social Forces C12 Financial Investment in School Basketball Undertakings C21 Types of School Basketball Media C22 Media Attention of School Basketball C31 Basketball Court Quality C32 Personal Sports Liability Insurance Coverage Rate D11 Training Times for Coaches Per Year D12 The Number of External High-Level Coaches Hired Per Semester D13 Development of School-Based Basketball Teaching Materials and Courses D21 Sound Working Mechanism D22 Management Agency Effectiveness D23 Degree of Collaboration Between Departments
		B3 Development Level	
		C1 Economic Support	
	C. Social Security Support Subsystem	C2 Media Coverage	
		C3 Social Security Support	
		D1 Education Level	
	D. Intellectual Support Subsystem		
		D2 Decision-making and Management	





## 2. Determination of Weights for Evaluation Indicators of Sustainable Development of Elementary School Basketball in Anhui Province

In this research, we will employ the Analytic Hierarchy Process to calculate the indicator weights of the evaluation indicator system for sustainable development in elementary school basketball in Anhui Province.

The AHP process includes four steps: (1) establishing a hierarchical structure and constructing the hierarchical structure model, (2) creating pairwise comparison judgment matrices to calculate the relative weights of each indicator, (3) conducting consistency tests for judgment matrices, and (4) calculating the weights using the eigenvalue method. The YHAAPP10.2 software will be used for the calculations. The weight results are shown in Table 2

Table 2 Weights of Evaluation Indicators for Sustainable Development of School Basketball in Elementary Schools in Anhui Province

Level 1 indicators	Weights	Level 2 Indicators	Weights	Level 3 Indicators	Weights
A. Survival Support Subsystem	0.3943	A1 Basic Resources	0.1904	A11 Basketball Teacher Compliance Rate	0.0542
				A12 Basketball Court Compliance Rate	0.0348
				A13 Amount of Special Funds for School Basketball Work	0.0639
				A14 School Basketball Population Ratio	0.0376
				A21 Basketball Class Hours Per Semester	0.0409
				A22 School Basketball Cultural Activities	0.0320
		A2 In-School Teaching Activities	0.0978	A23 Provides Basketball Professional Guidance and Service Frequency After Class	0.0249
				A31 Existence of School-level Male and Female Basketball Teams	0.0393
				A32 Establishment of Class, Grade, or School-level Basketball Teams or Clubs	0.0159



Level 1 indicators	Weights	Level 2 Indicators	Weights	Level 3 Indicators	Weights
B. Development Motivation Support Subsystem	0.2550	B1 Subject's Emphasis and Satisfaction	0.0865	A33 Training Hours Per Week	0.0170
				A34 School Basketball Teaching and Training Plan	0.0179
				A35 Compliance Rate of Intra-School Basketball Competitions per Semester	0.0160
				A36 Participation Rate in Out-of-School Basketball Competitions per Academic Year	0.0174
				B11 Parental Satisfaction with School Basketball	0.0260
				B12 School Importance Given to School Basketball	0.0319
				B13 Physical Education Teacher Salary Satisfaction	0.0286
				B21 Implementation of National Policies	0.0335
				B22 Incorporated into the Development Plan	0.0289
				B23 Improving Rules and Regulations	0.0450
				B31 Number of Schools with Basketball Characteristics	0.0185
				B32 Proportion of Basketball Teachers with Coaching Certificates	0.0154
				B33 Registered Number of Elementary	0.0110
		B2 Policy Support	0.1074		
		B3 Development Level	0.0610		



Level 1 indicators	Weights	Level 2 Indicators	Weights	Level 3 Indicators	Weights
C. Social Security Support Subsystem	0.2120	C1 Economic Support	0.0908	School Basketball Players	
				B34 Guarantee Level of School Basketball Competition	0.0160
				C11 Support from Social Forces	0.0359
				C12 Financial Investment in School Basketball Undertakings	0.0549
				C21 Types of School Basketball Media	0.0195
		C2: Media Coverage	0.0410	C22 Media Attention of School Basketball	0.0215
				C31 Basketball Court Quality	0.0310
				C32 Personal Sports Liability Insurance Coverage Rate	0.0493
				D11 Training Times for Coaches Per Year	0.0220
				D12 The Number of External High-Level Coaches Hired Per Semester	0.0188
D. Intellectual Support Subsystem	0.1387	D1 Education Level	0.0687	D13 Development of School-Based Basketball Teaching Materials and Courses	0.0279
				D21 Sound Working Mechanism	0.0256
				D22 Management Agency Effectiveness	0.0224
		D2 Decision-making and Management	0.0700	D23 Degree of Collaboration Between Departments	0.0220

### 3. Development of Evaluation Scale for Sustainable Development of Elementary School Basketball in Anhui Province

According to the evaluation scale development method (Sun Qingzhu, Hao Wenting, & Hong



Feng,2010) with the procedure of composite scoring method (Chen Zhengwei, 2013), the evaluation scale for the sustainable development of elementary school basketball in Anhui Province was developed. as shown in Table 3.

Table 3 Development of Evaluation Scale for Sustainable Development of Elementary School Basketball in Anhui Province

Evaluation content			Evaluation criteria and rules				
Level 1 indicators	Level 2 indicators	Level 3 indicators	A	B	C	D	score
			1	0.8	0.6	0	
A. Survival Support Subsystem (0.3943)	A1Basic Resources (0.1904)	A11 Basketball Teacher Compliance Rate (0.0542)	◆	◆			
		A12 Basketball Court Compliance Rate (0.0348)					
		A13 Amount of Special Funds for School Basketball Work (0.0639)					
		A14 School Basketball Population Ratio (0.0376)					
	A2 In-School Teaching Activities (0.0978)	A21 Basketball Class Hours Per Semester (0.0409)					
		A22 School Basketball Cultural Activities (0.0320)		◆	◆		
		A23 Provides Basketball Professional Guidance and Service Frequency After Class (0.0249)					
	A3 Training and Competition (0.1061 )	A31 Existence of School-level Male and Female Basketball Teams (0.0393)		◆	◆		
		A32 School Establishment of Class, Grade Representative Teams or Basketball Clubs or Interest Groups (0.0159)		◆	◆		



Evaluation content			Evaluation criteria and rules				
Level 1 indicators	Level 2 indicators	Level 3 indicators	A	B	C	D	score
			1	0.8	0.6	0	
		A33 Training Hours Per Week (0.0170)					
		A34 School Basketball Teaching and Training Plan (0.0179)		◆	◆		
		A35 Compliance Rate of Intra-School Basketball Competitions per Semester (0.0160)					
		A36 Participation Rate in Out-of-School Basketball Competitions per Academic Year (0.0174)					
B. Development Motivation Support Subsystem (0.2550 )	B1 Subject's Emphasis and Satisfaction (0.0865 )	B11 Parental Satisfaction with School Basketball (0.0260)					
		B12 School Importance Given to School Basketball (0.0319)					
		B13 Physical Education Teacher Salary Satisfaction (0.0286)					
	B2 Policy Support (0.1074)	B21 Implementation of National Policies (0.0335)					
		B22 Incorporation into Development Plan (0.0289)					
		B23 Improving Rules and Regulations (0.0450)					
	B3Development Level (0.0610)	B31 Number of Schools with Basketball Characteristics (0.0185)					
		B32 Proportion of Basketball Teachers with Coaching Certificates					





Evaluation content			Evaluation criteria and rules				
Level 1 indicators	Level 2 indicators	Level 3 indicators	A	B	C	D	score
			1	0.8	0.6	0	
		(0.0154)					
		B33 Registered Number of Elementary School Basketball Players (0.0110)					
		B34 Guarantee Level of School Basketball Competition (0.0160)					
C. Social Security Support Subsystem (0.2120)	C1 Economic Support (0.0908)	C11 Support From Social Forces (0.0359)					
		C12 Financial Investment in School Basketball Undertakings (0.0549)					
	C2 Media Coverage (0.0410)	C21 Types of School Basketball Media (0.0195)					
		C22 Media Attention of School Basketball (0.0215)					
	C3 Social Security Support (0.0803)	C31 Basketball Court Quality (0.0310)					
		C32 Personal Sports Liability Insurance Coverage Rate (0.0493)					
D. Intellectual Support Subsystem (0.1387)	D1 Education Level (0.0687)	D11 Training Times for Coaches Per Year (0.0220)					
		D12 The Number of External High-Level Coaches Hired Per Semester					
		D13 Development of School-Based Basketball Teaching Materials and Courses (0.0279)		◆	◆		
		D21 Sound Working Mechanism (0.0256)		◆	◆		
	D2 Decision-making and Management	D22 Management Agency					



Evaluation content			Evaluation criteria and rules				
Level 1 indicators	Level 2 indicators	Level 3 indicators	A	B	C	D	score
			1	0.8	0.6	0	
	(0.0700)	Effectiveness (0.0224)					
		D23 Degree of Collaboration Between Departments (0.0220)					

#### 4. Conclusions of the Focus Group Conversation

The experts reached the following consensus: The constructed indicator system for evaluating the sustainable development of elementary school basketball in Anhui Province received recognition and support from the experts regarding the scientificity of the evaluation indicators, the rationality of the evaluation criteria, the appropriateness of indicator weight determination, and the comprehensiveness and logicity of the indicator system. This provided an effective evaluation tool for assessing the sustainable development of school basketball and served as a reference basis for relevant decision-making and improvement. It is worth mentioning that in future research, further empirical studies could be conducted to verify the effectiveness and feasibility of the evaluation system in practical application. Moreover, continuous updates to the indicator content and attention to new developments in school basketball development will contribute to the ongoing improvement and optimization of the evaluation indicator system, promoting the healthy development of the school basketball cause.

#### Conclusion

This research aimed to develop a comprehensive, scientific, objective, and rational evaluation indicator system for the sustainable development of elementary school basketball in Anhui Province. The following conclusions were drawn from the previous research: The system Structure for Evaluating the Sustainable Development of Elementary School Basketball in Anhui Province was developed Evaluation Indicator System for the Sustainable Development of Elementary School Basketball in Anhui Province was Constructed (3) An Evaluation Scale for the Sustainable Development of Elementary School Basketball in Anhui Province was Developed (4) The Validity and Rationality of the Evaluation Indicator System were Confirmed through Focus Group Discussions.



## Discussion

**1. The use of the Delphi method and expert interviews ensured the participation of experts in the evaluation process, enhancing the reliability and effectiveness of the evaluation indicator system.** In this research, 19 experts from academic and practical backgrounds participated in the Delphi survey, ensuring diverse perspectives and expertise. This helped establish consensus among stakeholders such as educators, administrators, coaches, and relevant government officials, enhancing the credibility of the final evaluation framework. It has also been proven to be an effective method for constructing an evaluation indicator system for systems (Liu, W., 2008; Huang, H. T., 2009). The iterative Delphi process allowed researchers to collect and synthesize expert opinions through multiple rounds of consultation, eliminating extreme viewpoints and biases, and resulting in a more reliable and objective evaluation indicator system (Liu, X.Y, 2007).

**2. The use of the Analytic Hierarchy Process (AHP) to determine indicator weights enhances the objectivity and rigor of the evaluation.** His method has been proven effective in other comprehensive evaluation studies (Huang H. T., 2009; Wang, Z. H., & Chi, J. (2014)). Although the inclusion of AHP adds complexity to the evaluation process, it undoubtedly ensures accuracy in evaluating the comprehensive and reliable sustainable development of school basketball in Anhui Province.

## Recommendation

The development of the evaluation indicator system was an important step in promoting the sustainable development of school basketball in Anhui Province. However, some aspects deserve further attention and improvement. Based on the research results and discussions, the following suggestions are proposed to ensure the continuous improvement and effectiveness of the evaluation system:

### 1. Empirical Validation and Application

In future research, further empirical studies can be conducted to validate the effectiveness and feasibility of the evaluation system in practical applications. The indicator content should be continually updated to adapt to the new dynamics of school basketball development, further promoting the healthy development of school basketball.

### 2. Continuous Evaluation and Monitoring

Regular evaluations should be conducted to monitor the progress of school basketball development and identify areas for improvement. Stakeholders, including schools, educational departments, and sports organizations, should collaborate to ensure the continuity and comprehensiveness of the evaluation process.

### 3. Stakeholder Involvement in Research

Subsequent research can further expand the range of stakeholders, involving students, parents, and communities outside of schools. Stakeholder involvement is crucial for the effectiveness and sustainability of the evaluation. By including more stakeholders in the research process, the comprehensiveness and applicability of the evaluation indicators can be ensured, enhancing the practicality of the evaluation results.



## Reference

- Chen, J. (2001). *Research on the Sustainable Development Strategy of Chinese Basketball Professionalization*. Ph.D. Dissertation, Beijing Sport University.
- Chen, Z. (2013). *Comprehensive Evaluation Technology and Application*. Chengdu: Southwestern University of Finance and Economics Press.
- Huang, H.Y. (2009). *Pre-evaluation research on the comprehensive impact of sports events*. PhD dissertation: Shanghai Institute of Physical Education.
- Liu, C. M., Yu, C. G., Liu, W., Ding, H. Y., Ding, Y. H., & Lu, L. (2002). Evaluation Index System for Sustainable Development of Competitive Sports. *Journal of Physical Education*, 1, 15-19.
- Liu, Q. G., Xu, Y., & Zhi, W. B. (2020). Research on the Connection and Cultivation of Competitive Basketball Talents in CUBA and CBA Leagues in the "New Period. *Journal of Shenyang Sports Institute*, 2, 108-115.
- Liu, W. (2008). *Research on the Sustainable Development System and Evaluation of Sports in my country*. Ph.D., Fujian Normal University: Fujian Normal University.
- Liu, W. (2008). *Research on the Sustainable Development System and Evaluation of Sports in my country*. Ph.D., Fujian Normal University: Fujian Normal University.
- Liu, X.Y., (2007) The use of the Delphi method in the evaluation of interdisciplinary research. *Journal of Southwest Jiaotong University (Social Science Edition)*. 21-25
- Mebratu, D. (1998). Sustainability and sustainable development: Historical and conceptual review. *Environmental impact assessment review*, 18(6), 493-520.
- Sun, M. (2004). *Advanced Course of Modern Basketball*. Beijing: People's Sports Publishing House.
- Sun, Q. Z., Hao, W. T., & Hong, F. (2010). *Sports Measurement and Evaluation*. Beijing: Higher Education Press.
- Tang, L., & Cai, Z. (2011). Review of Sports Evaluation Research in my country. *Journal of Shanghai Institute of Physical Education*, 3, 28-32.
- The General Office of the State Council of China. (2016). *The Opinions on Strengthening Physical Education in Schools and Promoting All-Round Development of Students' Physical and Mental Health*. Retrieved: [http://www.moe.gov.cn/jyb\\_xwfb/s6052/moe\\_838/201605/t20160507\\_242345.html](http://www.moe.gov.cn/jyb_xwfb/s6052/moe_838/201605/t20160507_242345.html)
- Wan, Y. (2015). *Research on the Evaluation Index System of Physical Fitness for Junior High School Students in Shanghai*. Doctoral dissertation: Shanghai Normal University.
- Wang, J.L., & Zhao, C.Z., (1998). The relevance of sport to sustainable development strategies. *Journal of Shanghai Institute of Physical Education*, 22(2), 16-21.
- Wang, Z. H., & Chi, J. (2014). Research on the Evaluation Index System of a Sports Powerhouse. *Journal of Beijing Sport University*, 11, 15-22.
- Yue, J., & Wang, Y. (2004). Analysis and Research on Subjective and Objective Factors Affecting the Development of College Basketball in My Country. *Journal of Guangzhou Institute of Physical Education*, 5, 78-80.
- Zeng, Z. X., & Gu, P. L. (2000). *Analysis and Evaluation of Sustainable Development Systems*. Beijing: Science Press.
- Zhang, S.Q. (2006). *Theoretical Research on the Sustainable Development of Basketball in my country*. Master's Thesis, Henan University.



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