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Basketball Education Mode of Talent Training Effects

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Abstract: *To counter the problem of basketball education mode, this paper focuses on the proportion of all kinds of education mode, basketball education mode by using qualitative analysis and quantitative analysis, analytic hierarchy process (ahp) in the physical quality and spirit of cooperation, competition consciousness, ability to resist down four aspects as the criterion. The research results show that the physical education for basketball for important accounted for 40.2%, and basketball is a team sport, therefore, in the basketball education mode, the cooperation ability of students training, followed by than 32.5% of the total; For students or contemporary college students, the humanities education is easily student life, education and entertainment to relax pressure is an effective way to study, accounting for 28.3% of education mode.*

Keywords: *Education mode; Hierarchical analysis; Physical education; Cultivation of talents*

1. INTRODUCTION

Over the years, colleges and universities basketball class teaching has been characterized by the masters of the teacher is teaching, the teaching methods, organization forms is too unified, normalization, often only pay attention to students' technological learning, in the basketball teaching methods are also in order to cope with technical examination, the teaching is often difficult to effectively improve the basic technology and poor physical condition of students' basketball quality and physical quality(Liang, 2013).

Basketball general course teaching evaluation of scientific and reasonable can effectively promote the basketball general course education development in colleges and universities improve the students' basketball quality and physical quality, promote the lifelong sports ideology in the spread of the students (Song, 2013). At present, our country basketball ball teaching content, only for testing evaluation understanding deviation, evaluation content is not comprehensive evaluation is also a lack of scientific nature. In view of the present our country college basketball teaching problem, many scholars have studied it, including: Mr Sheng using self-organizing competitive network such as network and the method to study the professional colleges and universities sports basketball teaching evaluation system in China, and put forward a neural network teaching evaluation system is the future direction of the focus of the reform of physical education and so on (Chen *et al.*, 2013). using the method of documentary, mathematical statistics method by zhejiang university public sports such as basketball lesson teaching target public basketball class teaching evaluation, research its teaching content and teaching evaluation system, optimize the current teaching evaluation system (Li et al., 2013); Shang Xiaoyong etc. analysis of the current our country university basketball teaching evaluation system of the characteristics and existing problems, and put forward the students of basketball basic movements such as learning and so on (Zhang, 2012); Luo based on the current reform of basketball teaching and the teaching of the existing problems are analyzed, the construction of a scientific evaluation system of basketball general course, and further promote the further deepening of the reform of the teaching model (Jiang, 2014). Chen Xin using the methods of literature, investigation and study analysis of the professional sports education in human province the basketball class teaching evaluation of the status quo, explore the evaluation method of sports professional basketball teaching evaluation, and proposed the corresponding opinion (Zheng, 2015). Analytic hierarchy process is originated from 1970s that discovered by an American operational research expert, he classified objects relative factors into target layer, criterion layer, scheme layer, and formed into good qualitative and quantitative analysis (Liu, 2014).

In recent years, domestic researches on basketball are fewer, and research orientations more concentrate on basketball status analysis, basketball training mode, basketball humanistic analysis and so on. Though competitive basketball appeared systematic researches, it lacked of meticulous researches, and lacked of cogent strategy. The paper combines with analytic hierarchy process to make research on Chinese basketball education mode.

2. MODEL ESTABLISHMENTS

2.1. Establish Hierarchical Structure

Firstly establish a clear and well-organized structure for problems, at first establish three layer relations, target layer, medium layer, scheme layer. Classified layer number is related to research objects' complicated degree and detailed degree. The paper based on analytic hierarchy process, it quantizes basketball. Establish target layer, criterion layer, scheme layer relations.

Target layer: Basketball education mode.

Criterion layer: scheme's influence factors, c_1 is the physical quality, c_2 is spirit of cooperation, c_3 is sense of competition, c_4 is anti frustration ability.

Scheme layer: A_1 is cooperative education, A_2 is physical education, A_3 is entertainment and humanistic education, it gets hierarchical structure.

2.2. Construct Each Layer Judgment Matrix

In criterion layer, each criterion target occupies different proportions, by researchers researching on criterion layer, and according to number 1-9 and its reciprocal to judge each criterion target occupied weights. The paper takes Table 1 showed 1-9 scale table as evidence, it makes weight analysis.

Table1. *1-9 Scale Table*

Scale a_{ij}	Definition
1	factor i and factor j have equal importance
3	factor i is slightly more important than factor j
5	factor i is relative more important than factor j
7	factor i is extremely more important than factor
9	factor i is absolute more important than factor j
2,4,6,8	Indicates middle state corresponding scale value of above judgments
Reciprocal	If factor i and factor j are relative weak, obtained judgment is reciprocal

At first, solve judgment matrix, according to above principle, reference 1-9 scale setting, and according to experts' experiences and refer to lots of documents, it gets paired comparison matrix.

2.3. Hierarchical Single Arrangement and Consistency Test

Use consistency indicator to test: Set in comparison matrix, $\lambda_{\max}$ is maximum feature value, n is comparison matrix order.: $CI = \frac{\lambda_{\max} - n}{n-1}$, CI Value gets smaller; Judgment matrix gets closer to completely consistent. CI gets bigger shows that known degree is lower.

2.4. Hierarchy Total Sorting and its Consistency Test

$$A = \begin{Bmatrix} 1 & 1/3 & 3 & 3 \\ 3 & 1 & 5 & 5 \\ 1/3 & 1/5 & 1 & 1 \\ 1/3 & 1/5 & 1 & 1 \end{Bmatrix} \xrightarrow{\text{Column vector normalization}} \begin{Bmatrix} 0.214 & 0.192 & 0.3 & 0.3 \\ 0.075 & 0.577 & 0.5 & 0.5 \\ 0.121 & 0.115 & 0.1 & 0.1 \\ 0.201 & 0.115 & 0.1 & 0.1 \end{Bmatrix}$$

$$\xrightarrow{\text{Solve sum by line}} \begin{Bmatrix} 1.066 \\ 2.22 \\ 0.386 \\ 0.386 \end{Bmatrix} \xrightarrow{\text{Normalization}} \begin{Bmatrix} 0.2515 \\ 0.555 \\ 0.0965 \\ 0.0965 \end{Bmatrix} = W^{(0)}$$

It can get:

$$AW^{(0)}=\begin{Bmatrix}1 & 1/3 & 3 & 3\\ 3 & 1 & 5 & 5\\ 1/3 & 1/5 & 1 & 1\\ 1/3 & 1/5 & 1 & 1\end{Bmatrix}\begin{Bmatrix}0.2514\\ 0.555\\ 0.0965\\ 0.0965\end{Bmatrix}=\begin{Bmatrix}1.012\\ 2.275\\ 0.387\\ 0.387\end{Bmatrix}$$

$$\lambda_{\max}^{(0)}=\frac{1}{4}\left(\frac{1.054}{0.257}+\frac{2.254}{0.786}+\frac{0.257}{0.045}+\frac{0.457}{0.078}\right)=4.038;\quad w^{(0)}=\begin{pmatrix}0.278\\ 0.56\\ 0.045\\ 0.098\end{pmatrix}$$

(1) Similarly, it can calculate judgment matrix

$$B_1=\begin{Bmatrix}1 & 1 & 1/3\\ 2 & 1 & 1/3\\ 3 & 6 & 1\end{Bmatrix},B_2=\begin{Bmatrix}1 & 5 & 5\\ 1/5 & 1 & 2\\ 1/5 & 1/5 & 1\end{Bmatrix},B_3=\begin{Bmatrix}1 & 6 & 8\\ 1/5 & 1 & 5\\ 1/8 & 1/5 & 1\end{Bmatrix},B_4=\begin{Bmatrix}1 & 8 & 8\\ 1/5 & 1 & 5\\ 1/8 & 1/5 & 1\end{Bmatrix}$$

By above, it is clear that the paper takes solved maximum feature value and feature vector as weights to analyze, and establishes weight hierarchical Figure 1.

$$\lambda^{(1)}{}_{\max}=3.31,\omega^{(1)}{}_1=\begin{Bmatrix}0.252\\ 0.089\\ 0.66\end{Bmatrix};\ \lambda^{(2)}{}_{\max}=3.12,\omega^{(1)}{}_2=\begin{Bmatrix}0.575\\ 0.286\\ 0.139\end{Bmatrix};$$

$$\lambda^{(3)}{}_{\max}=3.30,\omega^{(1)}{}_3=\begin{Bmatrix}0.624\\ 0.240\\ 0.136\end{Bmatrix};\ \lambda^{(4)}{}_{\max}=4.05,\omega^{(1)}{}_4=\begin{Bmatrix}0.185\\ 0.240\\ 0.575\end{Bmatrix}$$

Use Table 7 RI value to test consistency indicator: $CI=\frac{\lambda_{\max}-n}{n-1}$, $CR=\frac{CI}{RI}$

Table7. *RI Value*

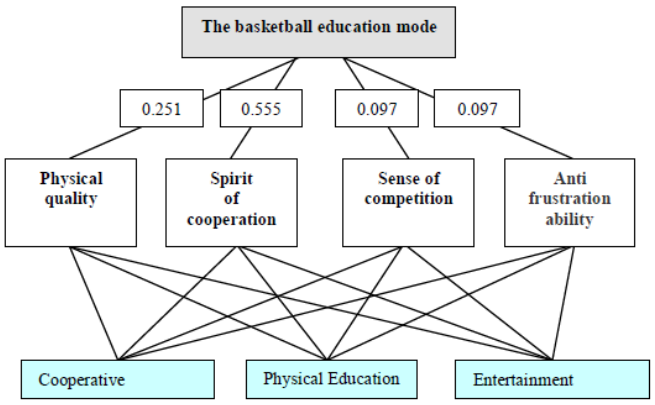
n	1	2	3	4	5	6	7	8	9	10	11
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49	1.51

By calculating, it gets judgment matrix A, $\lambda^{(0)}{}_{\max}=4.073, RI=0.9$

$$CI=\frac{4.073-4}{4-1}=0.24\ ;\ CR=\frac{CI}{RI}=\frac{0.024}{0.90}=0.027<0.1$$

It shows A inconsistency test is valid and within permissible range, it can use A feature vector to replace weight vector.

(2) Similarly, make consistency test on judgment matrix B_1, B_2, B_3, B_4, it gets weight vectors. Utilize hierarchical chart drawing out calculation results from target layer to scheme layer, as Figure 1 show.



$$\begin{Bmatrix}0.252\\ 0.089\\ 0.66\end{Bmatrix},\begin{Bmatrix}0.575\\ 0.286\\ 0.139\end{Bmatrix},\begin{Bmatrix}0.624\\ 0.240\\ 0.136\end{Bmatrix},\begin{Bmatrix}0.185\\ 0.240\\ 0.575\end{Bmatrix}$$

Figure1. *Hierarchical Chart*

Calculation structure as following:

$$\omega^{(1)} = (\omega_1^{(1)}, \omega_2^{(1)}, \omega_3^{(1)}, \omega_3^{(1)}) = \begin{Bmatrix} 0.624 & 0.185 & 0.252 & 0.575 \\ 0.234 & 0.240 & 0.089 & 0.286 \\ 0.136 & 0.575 & 0.66 & 0.139 \end{Bmatrix}$$

$$w = w^{(1)}w^{(0)} = \begin{Bmatrix} 0.262 & 0.585 & 0.664 & 0.185 \\ 0.079 & 0.276 & 0.220 & 0.240 \\ 0.66 & 0.149 & 0.156 & 0.575 \end{Bmatrix} \begin{Bmatrix} 0.567 \\ 0.056 \\ 0.104 \\ 0.273 \end{Bmatrix} = \begin{Bmatrix} 0.325 \\ 0.402 \\ 0.283 \end{Bmatrix}$$

It gets conclusions: in basketball education mode, physical education is particularly important to basketball that occupied proportion is 40.2%, and basketball is a kind of team exercise, therefore, in basketball education mode, followed by students cooperative ability training that occupies 32.5% of totals. Thirdly, to students in school or contemporary university students, humanistic education and entertainment education are effective ways to easy students' life and relieve learning pressure, therefore in education mode, it occupies 28.3%.

3. CONCLUSIONS

To counter the problem of basketball education mode, mainly for the proportion of all kinds of education mode, basketball education mode by using qualitative analysis and quantitative analysis, analytic hierarchy process (ahp) in the physical quality and spirit of cooperation, competition consciousness, ability to resist down four aspects as the criterion. Get basketball education mode in the cooperative education, physical education, entertainment and humanistic education three aspects of education. Based on judgment matrix to solve the maximum eigen value of feature vector, get the weight value, the conclusion for the basketball education mode, and physical education for basketball for important accounted for 40.2%, than 32.5% of the total cooperation ability training, the humanities education and entertainment education in the education mode of accounting for 28.3%.

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