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Contents

Research on the Management of Physical Education Resources with Big Data

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Abstract: At present, physical education in Colleges and universities lacks the correct understanding and understanding of the use of big data, the lack of professional application and management personnel, and the immaturity of big data application system. In educational practice, we should start from four aspects: optimizing teaching content, improving teaching quality, effectively improving the proportion of sports population in Colleges and universities, expanding the educational function of College Students'physique health test, and conducting teaching scientific research. Emancipate the mind, enhance the awareness of big data application, optimize the allocation of resources, enhance the development ability of big data resources, attach importance to the training of big data talents, and provide effective personnel guarantee for the construction of big data application ability.

Keywords: Big Data; Colleges and Universities; Sports Resources; Management

1. Introduction

The development of information technology promotes the maturity of big data technology and application, and achieves better governance performance in many fields. For a long time, China's mass sports has followed the administrative governance model, the government relies on experience to act on its subjective will, and unscientific decision-making still exists; the information barriers between government departments and levels are serious, the cost of government mass sports management is too high and too much intervention is excessive; the contradiction between the supply of public sports services and the increasingly diversified demand for mass sports is more prominent, which hinders the masses. Realization of modernization of mass sports governance [1-3]. From December to August 2017, General Secretary Xi Jinping, when presiding over the study of the Political Bureau of the CPC Central Committee, stressed that we should use big data to improve the level of modernization of national governance. Establish and improve the mechanism of big data assisting scientific decision-making and social governance, promote the innovation of government management and social governance mode, and realize the scientificalization of government decision-making, the precision of social governance and the high efficiency of public services. Accelerate data centralization and sharing in the field of public services, and form a strong joint force of social governance. Under the new historical conditions, the speech of the General Secretary is an important deployment to optimize government governance and social governance by using Internet thinking and information technology, and to promote the further development of public services. It is also an ideological weapon and an action guide to solve the current problems of mass sports governance system. At this stage, the national fitness has become a national strategy. The governance of mass sports is the top priority of our sports management. How to scientifically use network information technology to promote mass sports governance and better integrate into the "Internet +" social background and help the realization of national fitness strategy, these should be a topic of academic concern, and this is also achieved. The meaning of the great rejuvenation of the Chinese nation.

The development of sports informationization and the demand of resource integration. "Internet +" has been widely applied to various industries and departments. In the National Fitness Program (2016-2020 years) and the sports development 13th Five-Year plan, the State Sports General Administration explicitly requires that Internet + technology be applied to sports and the use of information technology to build a public sports resource platform. At the same time, with the demand of sports resources integration, taking the application of "Internet +" as an opportunity, we build a sports resource information platform of big data to solve the problems of uneven distribution of public sports resources, dislocation of supply and demand, and information errors in supply and demand. [4-5] The problem of big data of sports resources. Although the large data of sports resources has been developed in recent years, there are still many problems in the integration of large data of sports resources because of the huge and complex information and the content involved. For example, it is difficult to integrate the new software and hardware system with the old system, the correlation degree of data information on the system is relatively low, the classification of data is unreasonable, and the format of data is too different. The concept of

large data platform for sports resources information. The so-called big data platform of sports resources information is to use information technology to excavate sports resources information with certain use value, and store the information in accordance with the provisions to establish a large information resource database, and then on the basis of this large information resource database, derive and establish various user information platforms.

2. Advantages of Sports Intelligence Governance in the Background of Two Big Data

The traditional management system of mass sports has led to the division of government departments, poor operation, and the formation of inefficient "fragmented" government. The government is not closely related to the market and society [8]. It is not enough to face the governance problems of mass sports work by government strength alone. Intelligence governance is the combination of intelligence factors and governance factors. It is a new scheme to solve public management problems. It takes the emerging technologies such as network, big data and cloud computing as platforms to agglomerate the main bodies of society, market and the public, so as to promote the interaction and exchange between government and social subjects. By participating in the mass sports governance process on the platform, the government fully absorbs the opinions of other social subjects, carefully analyses the sports needs, enables the government to formulate a targeted mass sports policy, provide high-quality and personalized sports public goods to meet the needs of all parties, and promotes the government governance model from a single governance subject to government-led and public participation. The new model transformation of multi-dimensional and cooperative governance.

3. Application of Big Data in College Physical Education Teaching

Big data has been applied in college physical education. In the western developed countries, many well-known universities have started the research of big data of education. [1] In recent years, China has also attached great importance to the informationization of education and highly supported the in-depth integration of education and information technology. The Key Points of Education Informatization Work in 2014 promulgated by the Ministry of Education clearly points out that in order to continuously provide accurate data support for educational decision-making, it is necessary to strengthen the integration of relevant data resources, do a good job of dynamic monitoring, strengthen the application of decision-making, and provide educational prediction. The construction and putting into use of intelligent campus, the popularization and use of new forms of education

such as the intellectualization of higher education, such as Mu class, micro class, flip class, teaching platform and so on, all send a strong signal to the application of large data and information technology in Physical Education in Colleges and universities.

3.1. Optimizing teaching content and improving teaching quality

To a certain extent, the differences between teachers'abilities and teaching experience determine their teaching effect in the classroom, and the students' mastery degree will also have great differences. The application of big data technology can combine the advantages of many teachers, realize the optimization and integration of resources, and enable teachers to grasp the teaching effect in an all-round way. In addition, big data can also provide different teaching methods for teachers to teach in accordance with their aptitude, which is more conducive to optimizing the teaching plan and content. In addition, big data technology can also be used in classroom teaching, so that the classroom will become more places for summary, communication and display, and targeted and diversified sports education model will gradually be accepted and recognized by students and parents. [4] Therefore, actively promoting and applying the related technology of big data in the field of physical education in Colleges and universities can improve the quality of physical education, extracurricular sports activities and sports training more effectively, and further improve the physical quality of college students in all aspects.

3.2. Effectively increasing the proportion of sports population in colleges and universities

According to statistics, the proportion of sports population in Colleges and universities is not optimistic, accounting for less than 20%-40% of the total population. Although students have accepted physical education in primary and secondary schools, students'sports ability is still general, and in addition, they lack a correct understanding of the idea of physical fitness and ability education. In the sample survey of P.E. teachers, it can be found that after the majority of students in the Journal of Qiqihar University (Philosophy and Social Sciences Edition) entered the university, their recognition of the importance of P.E. class still remained at the middle school stage, their sports ability was declining year by year, and they lacked the necessary theoretical and technical guidance of P.E. [5] This is also the main body of P.E. education in Colleges and universities in the reform and development. One of the major obstacles. However, by collecting the data of College Students'sports cognition, sports knowledge education and the frequency of sports participation, we can analyze and extract the relevant contents of sports education, such as the items suitable for college students' participation and the period of par-

ticipation, so as to cultivate their good sports attitude, good exercise habits, grasp the basic knowledge and skills of sports, and become the real sports population. One member.

3.3. conducting scientific research in Teaching

With the scientific and systematic development of physical education teaching in Colleges and universities, more and more researchers put physical education teaching into the perspective of big data, using the big data generated by traditional data and network platform, mobile terminal equipment and wearable equipment to analyze, evaluate, intervene, guide and predict students'learning process and learning behavior. However, many college physical education workers still use old concepts to view the problem of college physical education. Therefore, we regularly train and learn modern information technology for College Physical Education workers, constantly instill advanced teaching concepts and modes, let them accept new concepts in the context of the development of a new era, and then change their traditional and old series of teaching. Ideas of learning and evaluation.

4. Concluding Remarks

The information platform of sports resources based on big data construction can effectively distribute and utilize sports resources information, solve the problems of uneven distribution of sports resources information, dislocation of sports supply and demand, and misinformation of sports resources. Under the background of big data era, we should speed up the pace of sports information construction in China and promote the participation of the whole people in sports fitness.

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Research on Profit Model of Public Transport Mobile Payment

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Abstract: This paper will evaluate the problem of bus mobile payment from four angles. By means of fuzzy impairment clustering, the number of categories and clustering centers are preliminarily established to describe the payment characteristics of riders, and the characteristic values are accurately extracted by using fuzzy C mean clustering, and the characteristics of Cox-stuart trend test are used to judge the development trend of the characteristics. Assuming that the platform income comes entirely from the precipitation capital income and service fee income, through the decision mode of precipitation capital income and fee income, the two-party profit expression is obtained, the two sides will be added to the total profit, and the factors affecting the total profit are obtained. Using the bilateral market theory, the Hotelling model is introduced, the profit situation is further analyzed quantitatively, and the suggestions for the innovation of profit model are put forward accordingly.

Keywords: Fuzzy C mean clustering analysis; Cox-Stuart trend test; Bilateral market; Hotelling model

1. Introduction

In recent years, the rapid development of mobile payment, the growth of public transport mobile payment services has reduced the problem of deposits for public transport, reduced the operating costs of public transport companies, and better provided services to the public; at the same time, in the big data, cloud computing Contemporaryally, mobile payment can better collect and analyze data in the public transportation field, and better provide data samples for bus companies to better serve the citizens. This promotes the development of public transportation, encourages people to travel by public transportation, and relieves travel pressure. Has a positive impact.

2. Sources of Research Data and Model Assumptions

The data in this paper comes from the local statistical bureau and public transport company information data. In the process of establishing model analysis problems, the following assumptions are made: Ignoring the influence of seasonal factors on user payment behavior; the full source of revenue from third-party payment platforms. The deposit funds of the payment method are all from the user's recharge, and each user's recharged funds are used in the same month; The service fee income is all from the bus company registration. Fees and service fees charged to the bus company; Users who use third-party payments are an increasing function of their utility.

3. Research Data Preprocessing

3.1. Research data meaning

ID represents the ID of the rider; LASTTIME represents the last ride time; UPTIME represents the ride time; PAYTYPE represents the payment method; METRONUM represents the number of subway rides in the current month; BUSNUM represents the number of buses in the current month; BUSMETRONUM represents the bus subway of the current month The total number of rides.

3.2. Data processing

For the 0001-1-1 last ride time, the passengers who did not have the ride time were excluded from the abnormal value. Sort the three times for each person (ID) by the number of subways this month, the number of times the bus is used, and the total number of times, and remove the data of people who are too few times because these people may It is an occasional business trip, not a person in this city, the data can be removed. Sort the interval of the entire month, and remove the data that is too long, because such personnel can only be removed once in a bus or subway. Payment method: 0 means bus mobile payment, 1 means bus card payment, and other payment methods are excluded.

3.3. Normalization of data

Since the passenger ID, the travel time, the number of rides, and the payment type data have different dimensional units, the size of the data varies greatly, and the range of the data is also different. Larger differences will increase the impact of certain variables on the prediction results, and will also reduce the impact of certain variables on the prediction model. Therefore, it is necessary

to perform passenger ID, travel time, number of rides, and payment type data after the abnormal value is removed. Normalized. Converting all the data into a number between [0, 1] can eliminate the deviation of the data due to different sizes, and finally reverse-normalize the prediction results. There are many methods for normalizing data. In this paper, the maximum and minimum methods are used for normalization. The formula for normalizing passenger ID, travel time, number of rides, and payment type is as follows.

$$x_i^{'} = \frac{x_i - x_{\min}}{x_{\max} - x_{\min}} \tag{1}$$

Where x_i and $x_i^{'}$ are the passenger ID, ride time, ride number, and payment type data before and after normalization, and x min and x max refer to the passenger ID, ride time, ride number, and minimum value of payment type data, respectively. And the maximum.

4. Analysis of Passengers' Payment Characteristics Through Cox-Stuart Trend

4.1. Path of research

Firstly, the data is cleaned and filtered by the preprocessing of the data. Through the fuzzy impaired clustering, the number of categories and the cluster center are preliminarily established, and the payment characteristics of the occupants are described in different categories. Based on the fuzzy impaired clustering, further fuzzy c-means clustering is carried out, and the eigenvalues are extracted accurately to determine the characteristic development trend of Cox-Stuart trend test.

4.2. Research methods

4.2.1. Subtractive clustering method

Because the data in February is more than the data of METRONUM, BUSNUM, and BUSMETRONUM compared with May, August, and November, and the influence of seasonal factors on the payment behavior of users is negligible, and the data bad rate in February It is only 0.127%, so the information from February is selected as a sample.

Since urban users have their own personalized payment characteristics, in order to carry out classification research, a clustering method is adopted to classify the user information of the city. Since there is no prior information for the user classification number, fuzzy subtractive clustering is used to determine the corresponding Classification number and cluster center. Each data point is taken as a possible data center, and the probability of the point as a cluster center is calculated based on the data point density around each data point. If there is the highest data point density around a data point, you can select it as the cluster center. After selecting the first cluster center, continue to use the same method from the remaining points that may be cluster centers. Select the next cluster center. The process continues until the likelihood that all remaining data points are clustered centers below a certain threshold.

In the mat lab, the subclust function is used for calculation. Since $0 < \text{RADII} < 1$, and the smaller the RADII value, the larger the capacity of the cluster center. Considering the selection of 1750 samples in February, the sample size is too large, so take $\text{RADII} = 0.3$, first calculate the density of each data point to get the density index.

$$M(v_i) = \sum_{k-1}^{n} e^{-ad(x_k,v_i)}, \alpha = \frac{4}{t_1^2} \tag{2}$$

Find the data with the highest density index as the first cluster center V_{k-1}^{*}, then remove the density of this point, and then calculate the density index of the point.

$$M_k(v_i) = M_{k-1}(v_i) - M_{k-1}^{*} e^{-bd(v_{k-1}^{*},v_i)}, \beta = \frac{4}{t_1^2} \tag{3}$$

On this basis, find the largest density indicator and use this as the clustering center. Cycle through until:

$$\frac{M_{k-1}^{*}}{M_1^{*}} < d \tag{4}$$

Finally, we can get the number of clusters as 2, the cluster center is as shown in the following table (from left to right: "the number of bus rides in the month", "the number of subway rides in the current month", "the last trade time and The interval between the rides is "the dimensionless value of the three variables".

Table 1. Fuzzy impairment cluster center table

Project	Zbusnum	Zmetronum	Ztime
Cluster center value	-0.3126	-0.1728	-0.0273
	1.1281	-0.1728	-0.049

According to the calculation results, the first type of users in the table have more bus rides in the month, and the interval between the last transaction time and the current travel time is shorter, which is an active user; and the second type of user travels by bus in the current month. The number of times is small, and the interval between the last transaction time and the current travel time is long, which is an underactive user. For the two types of cluster centers in the current month, the cluster centers overlap, which shows that the difference between the two categories is not significant.

The cluster 3D map is drawn using mat lab as follows. Each scatter represents a user's payment-related behavior, with black circles representing cluster centers.
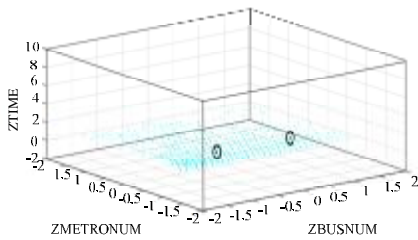
Figure 1. User payment behavior scatter clustering diagram

4.2.2. Fuzzy c-means clustering

Based on the fuzzy subtractive clustering, we obtained the cluster number 1, and the initial clustering center. Using Mat lab for iterative and fuzzy c-cluster, the users were clustered in February.

4.2.3. Cox-Stuart trend test

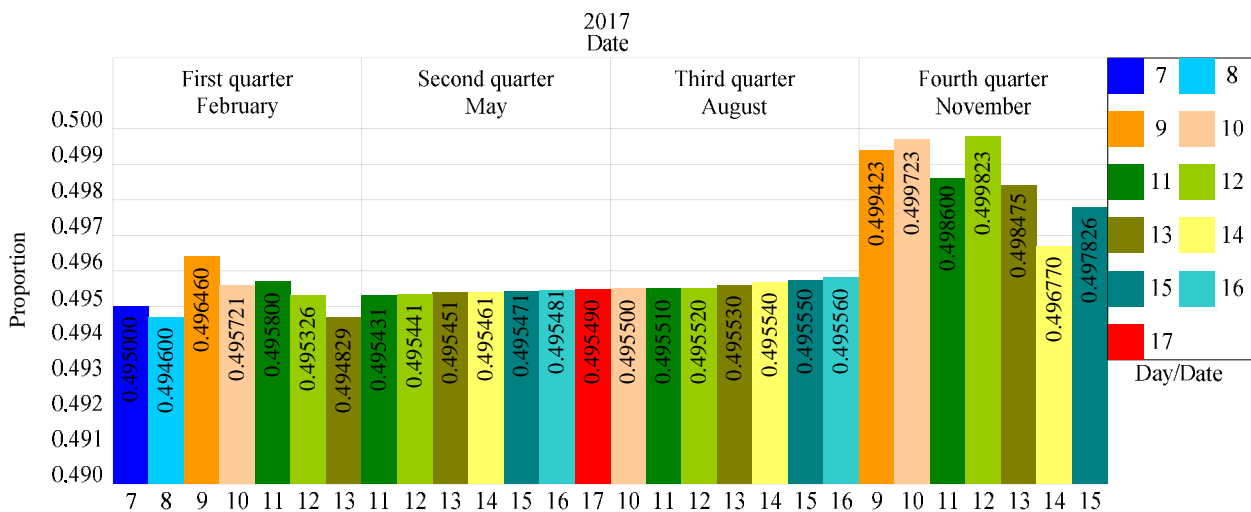For the data in Annex I, the trend of mobile payment is calculated and plotted as follows.

Figure 2. Trends in the proportion of public transport payments

As can be seen from Figure 2, the overall trend of bus mobile payment ratio seems to show an increasing trend, but it does not always increase. The Cox-Stuart trend test is a method for quickly judging whether there is a trend that does not depend on the trend structure. The theoretical basis for the Cox-Stuart trend existence test is the symbol test. Its test idea is: directly consider the trend of data, if the data has an upward trend, then the value of the data that is listed later is significantly larger than the value of the data that precedes it. Conversely, if the data has a downward trend, then the row In the latter data, the value of the data is significantly smaller than the value of the data in the front, and the difference between the data of the two periods before and after is used to judge the total trend of the data. So the team used the Cox-Stuart method to further analyze the data.

A hypothesis can be established:

H0: no growth trend.

H1: There is a growing trend.

Step: The amount of time $n = 28$ is even, so $c = n/2 = 14$ pairs. Compare each observation to another observation separated by 14. So there are 14 pairs. Then look at the growth pair and the reduced pair to determine the total trend. Take and form a pair. So the pair in this example is:
$(X_1, X_{15}), (X_2, X_{16}), (X_3, X_{17}), (X_4, X_{18}), (X_5, X_{19}), (X_6, X_{20}), (X_7, X_{21}),$
$(X_8, X_{22}), (X_9, X_{23}), (X_{10}, X_{24}), (X_{11}, X_{25}), (X_{12}, X_{26}), (X_{13}, X_{27}), (X_{14}, X_{28})$

That is: (0.494999938 ,0.495500455),
(0.494600,0.495510414),(0.496460334,0.495520373) ,
(0.495720911,0.495530332),(0.495800,0.495540290),
(0.495326499,0.495550249),
(0.494828666,0.495560208),
(0.495430742,0.499423401),(0.495440701,0.499784754)
,(0.495450660,0.498600),
(0.495460619 ,0.499822871),
(0.495470578,0.498475075),(0.495480537,0.496770448)
,(0.495490496 ,0.497825751)。

Use the sign of the difference between the two elements of each pair $D_i = x_i - x_{i+c}$ to measure the increase or decrease. Let S^+ be the number of positive D_i and S^- as the number of negative D_i.

As can be seen from Table 2, $S^+ = 3$, $S^- = 11$ 。 Obviously S^+ is far less than S^-, so the proportion of bus mobile payment has a growing trend.

Since the statistic should obey the binomial distribution $b(n',0.5)$ under the null hypothesis without trend, $a = 0.05$. Obtained statistical observations $k = S^+ = 3$, Use Excel software to calculate the formula.

$$P(K \le k) = P(K \le 1) = \frac{1}{2^{14}} \sum_{i=0}^{1} \binom{14}{i} \qquad (5)$$

$p < a$ ($a = 0.05$), Can reject the null hypothesis H0.

Therefore, based on the results of the data analysis, it is concluded that there is a growing trend in the proportion of bus mobile payment in the city. It also shows that the use of bus mobile payment in the city has been expanding in 2017.

5. Analysis of The Profitability of Third-Party Payment Platforms by Establishing Quantitative Models

5.1. Research ideas

We use the sedimentary capital income and service fee income as the two main sources of profit. Based on the Hotelling model, we use the user network efficiency to reduce the network cost, obtain the user utility, and use the partiality of utility to calculate the equilibrium formula under the maximum profit.

5.2. Precipitation capital gains

The third-party payment settlement fund refers to the collection of the transaction price of the transaction between the buyer and the seller that stays in the third-party payment platform account. Due to the large amount of delays in the payment and deferred liquidation of the buyers and sellers in the third-party payment platform, a large amount of funds accumulated in the platform and not participating in the circulation will be deposited. In the process, the third-party payment platform has the temporary right to use the deposited funds, and the liquidity benefit can be obtained (the interest rate is treated in the model according to the current deposit interest rate).

In order to ensure the validity of the model, we make the following rationalization hypothesis: the revenue of the third-party payment platform is all derived from the settlement of capital income and service fee income; the settlement funds of the payment method are all from the user's recharge, and each user each time The recharge funds are consumed on average within a month.

Indicates the user's monthly average recharge amount; tm indicates the time of one month (30 days); R0 indicates the current deposit interest rate.

Due to the existence of liquidity risk, credit risk and exchange rate risk, the above risks are weighted according to 30%, 60% and 10%. Finally, the risk of loss of deposit funds is 10%.

Then the formula for depositing capital gains is as follows:

$$
\begin{aligned}
L_1 &= 90\% \frac{R_0}{360} \sum_{i=1}^{n} F_i t_i, i = 1, 2 \ldots\ldots, n \\
&= 90\% \frac{R_0}{360} * n_1 * \bar{F} * \frac{t_m}{2} \qquad (6) \\
&= \frac{3 r_h}{80} * \bar{F} * n
\end{aligned}
$$

5.3. Procedure service fee income

For third-party payment platforms, the fee for the service fee is all derived from the registration fee of the bus company and the service fee charged to the bus company. The third-party payment platform does not charge the passengers a handling fee.

Then the formula for depositing capital gains is as follows:

$$
\begin{aligned}
L_2 &= (r_2 - r_1) \sum_{i=1}^{n_1} P m_i + P_r * n_2 \\
&= (r_2 - r_1) n_1 * P * \bar{m} + P_r * n_2 \\
L &= L_1 + L_2 \qquad (7) \\
&= 90\% \frac{R_0}{360} \sum_{i=1}^{n} F_i t_i + (r_2 - r_1) \sum_{i=1}^{n} P m_i + P_r * n_2 \\
&= \frac{3 r_{\text{活}}}{80} * \bar{F} + (r_2 - r_1) * P * \bar{m}] n_1 + P_r * n_2
\end{aligned}
$$

From the above formula, under the assumptions, the third-party payment platform is profitable with the average passenger recharge, the number of passengers and bus companies paid by the third party, the passenger price and the number of passengers, and the registration charged by the third-party payment platform to the bus company. Fee related. Now, this article starts from the hotel market of the bilateral market theory and conducts a more in-depth analysis.

5.4. Net profit function based on Hotelling model pricing

The third-party payment platform market has multiple economic networks of independent user groups that provide network revenues. It is a platform that allows end-user transactions, and allows passengers, bus companies, etc. to remain on the payment platform by appropriately charging fees from all parties. . Then according to the bilateral market theory, the third-party payment platform market is a typical bilateral market.

Based on the Hotelling model, price pricing and corporate pricing strategies and investment decisions can be made based on customer spending behavior. Then, under the Hotelling model, when the optimal equilibrium point is reached, the current maximum profit can be obtained.

Since users who use third-party payments are an increasing function of their utility, the profit function is as follows:

$$L = \frac{3r_h}{80} * \overline{F} + (r_2 - r_1) * P * \overline{m}] n_1 + P_r * n_2$$
$$n_1 = \varnothing(u_1), n_2 = \varnothing(u_2)$$
$$u_1 = q_1(a_1 n_2 + e_1 n_1) \qquad (8)$$
$$u_2 = q_2(a_2 n_1 + e_2 n_2) - \frac{n_1 * r_2 * P * \overline{m}}{n_2} P_r$$

$\frac{\partial L}{\partial u_1} = 0, \frac{\partial L}{\partial u_2} = 0$, The resulting p and p_r make the profit L the largest.

5.5. Model adaptation under dynamic factors

5.5.1. Fixed cost or variable cost increase

According to the dynamic pricing in the Hotling model, the platform increases the user's handling fee and the merchant's registration fee to ensure the realization of platform profit. At the same time, because the third-party payment platform has a negative correlation between the two-part fee, that is, the registration fee and the handling fee, the platform reduces the handling fee charged by the merchant to attract the registration and continuous operation of the merchant.

5.5.2. Increase in the number of transactions and enhancements from network externalities

User fees and merchant registration fees will be reduced. In order to ensure profit, the platform will increase the merchant's handling fee, and at the same time reduce the user's handling fee and the merchant's registration fee to attract more users and merchants, further increase the number of transactions, but ultimately tend to charge the merchants more fees to carry out the cost. subsidy.

5.5.3. Changes in platform preferences between users and merchants

The platform will change the pricing of users and merchants at the same time. Any increase in the user's or merchant's preference for the platform will cause the platform to shift to increase the handling fee charged to the merchant, and reduce the user's handling fee and the merchant's registration fee.

5.5.4. Cross-network externalities become larger or the number of platform users increases

The user fee in the model and the registration fee of the merchant will be reduced. At this time, the merchant's charging fee parameter in the model will fluctuate upward.

6. Profit Forecasting Through Profit Estimates Derived from Quantitative Models

6.1. Research ideas

According to the quantitative third-party payment platform profit model formula, through the data processing and empirical analysis of the actual value into the formula, the quantitative profit estimate is obtained.

6.2. Model establishment and results

According to the conclusion of the third-party payment platform profit model analysis, the final profit formula we obtained is as follows:

$$L = L_1 + L_2 = \frac{3R_0}{80} \times \sum_{i=1}^{n} F_i + (r_2 - r_1) \times \sum_{i=1}^{n} p_{m_i} + p_r n_2 \qquad (9)$$

Contact the real economic environment:
$R_0 = 0.35\%$, $r_2 = 0.35\%$, $r_1 = 0.2$, $p = 1$.
According to the processing of Annexes 1 and 2:
$\overline{m_i} = 4 \times 14 = 56$;
$\sum_{i=1}^{n} p m_i = p \sum_{i=1}^{n} m_i = n p \overline{m_i} = 1048576 \times 1 \times 56 = 58720256$, Assumed registration fee $p_r = 10000$, The city has bus company $n_2 = 5$ Finally calculated $L \approx 11030823$.

7. Business Feasibility Analysis

7.1. Research ideas

The team conducts analysis and demonstration through technical feasibility, economic feasibility and market feasibility, and gives specific suggestions.

7.2. Feasibility analysis of public transport payment

7.2.1. Technical feasibility

The popularity of mobile phones and the proportion of coverage of third-party payments by public transport in the future have provided technical support for their future development. According to statistics released by the People's Bank of China for the second consecutive year of the "Overall Situation of Payment System Operation", China's electronic payment business is quite large, and its mobile payment business has maintained a super-fast growth trend.

7.2.2. Economic feasibility

From the perspective of resource allocation, it is worthwhile to measure the value of public transportation third-party mobile payment projects, which is conducive to the realization of regional economic development goals, effective allocation of economic resources, increased supply, and improvement of people's lives.

7.2.3. Market feasibility

According to the Cox-Stuart trend test, we know that the proportion of public transport payments is getting bigger and bigger, and its penetration rate is increasing, showing an upward trend. Secondly, the public transportation payment of the residents has the characteristics of high frequency, and the incremental space for mobile payment use is relatively large.

7.3. Innovation in profit model

This paper follows the profit model synergy matching principle to make the profit source, profit generation and profit realization of the third-party electronic payment platform as the system context of researching the profit model, with emphasis on its market characteristics, pricing behavior and collaborative governance. The main way to formulate and improve the profit model is to implement differentiated pricing for users within the third-party electronic payment platform based on platform positioning and user scale, reflecting the mutual dependence of the transaction scales of the two sides, so as to obtain the maximum profit in the third-party electronic payment platform. Externally, the first is to coordinate the relationship with the bank, realize the investment income of the deposited funds, reduce the profit forecast, and realize the reasonable distribution of benefits. Second, establish the reputation mechanism of the third-party electronic payment platform, maintain its long-term development and finally coordinate internally and externally. Under, gain profitability.

8. Conclusion

According to the fuzzy C-means clustering analysis, we can classify user types into two types: active users and underactive users. For the two types of cluster centers in the current month, the cluster centers overlap, which shows that the difference between the two categories is not significant. Based on the results of the data analysis, the Cox-Stuar method is used to conclude that the population of mobile payment in the city has a growing trend. In 2017, the use of bus mobile payment in the city has been expanding. Then, based on the profit model of the third-party payment platform, the formula for calculating the net profit of public transport payment is derived, thereby predicting the full implementation of the profitability of public transport and the feasibility report, and further innovating the profit model.

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The Conception of the Evaluation System of Chinese Teenagers Students' Football Accomplishment

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Abstract: According to the needs of campus football development and the characteristics of Chinese teenagers students, this paper puts forward the conception of the evaluation system of Chinese teenagers students' football accomplishment from the perspective of football players – teenagers students, in order to provide evaluation basis for the evaluation of the development level of campus football.

Keywords: Campus football; Teenagers students; Football accomplishment; The evaluation system

1. Introduction

In recent years, the country has issued relevant documents on the development of football. It pointed out the problems and shortcomings of China's football development, and put forward the strategy and goal of China's football development, which alerted us to vigorously improve the level of China's football development is imminent.

2. The Original Intention of the Construction of the Evaluation System of Chinese Teenagers' Football Accomplishment

Football, as the world's largest sport, has a wide range of social impact. It has a positive role in promoting, whether it is to improve the national physical quality or the promotion of the spirit of patriotism and collectivism and national sports diplomacy. As an important group of football development, young students are crucial to the development of campus football. The development of young student football has positive effects both on the improvement of young people's constitution and personality.

Therefore, this paper puts forward the concept of football quality of young students, constructs the evaluation system of football quality of them, and truly checks the football level of young students and campus football level. The author believes that the football quality of young students refers to the integration of important qualities which can reflect the football level of young students, and should be combined with the characteristics of young students in China and the development needs of our country.

3. The Principles for the Construction of the Evaluation System of Chinese Teenagers' Football Literacy

3.1. Principles of sience

Scientificity is the basis of standardizing and unifying the indexes of the evaluation system of the football accomplishment of the young students, and it is the premise of reflecting the football accomplishment of the young students in our country objectively. Only by adhering to the scientific principle can the selection of indicators and the determination of index architecture be more reliable and reasonable, and the evaluation results be authentic and credible[1].

3.2. Principles of quantifiable

In order to ensure the operability of the evaluation system, the establishment of the evaluation system for the football quality of young students must follow the quantifiable principle. On the premise of ensuring that the system indicators reflect the evaluation objects at a high level, the index data can be obtained through direct measurement or calculation.

3.3. Principles of dynamic

The research object is a dynamic process, and the index of the evaluation system should not only reflect the status quo of the evaluation object statically, but also reflect the actual situation of the evaluation object in a long period of time dynamically.

3.4. Principles of directive

The establishment of the evaluation system of young students' football quality is ultimately to improve the current situation and improve the current level, so the

evaluation system should follow the guiding principles in the establishment process, so that the relevant national departments and policies can play a guiding role for students.

4. Thoughts on the Construction of the Evaluation System of Chinese Young Students' Football Literacy

On the basis of related research, using the method of expert interview, the conception of the evaluation system of football quality of Chinese youth students is preliminarily formed, which mainly includes the following aspects.

4.1. Football skills accomplishment

Football skill accomplishment mainly refers to the comprehensive accomplishment that can reflect the football skill level of young students. According to the standard for grading students' football skills (trial), students' football skills are evaluated from the aspects of ball sense, dribbling, kicking, physical quality and competition ability. Specific measurement standards can be referred to the document, different regions of the students can be adjusted appropriately, in order to accurately assess the real situation of football skills and accomplishment of young students.

4.2. Football behavior accomplishment

The football behavior accomplishment mainly refers to the football behavior accomplishment which carries on independently outside the usual training. It mainly includes the time, frequency and intensity of football. Through the measurement of the three dimensions of football behavioral literacy, reflecting the actual situation of football behavioral literacy.

4.3. Football psychological accomplishment

Football psychological accomplishment mainly reflects the attitude of young students towards football and their psychological skills in football matches. It includes the love and cognition of football, the enthusiasm for football training and the attitude of hard work. Competition psychological skills, mainly through the performance of skills and tactics during the game, the ability to control emotions in the game, the ability to deal with emergencies, slow movements to judge.

4.4. Football cultural accomplishment

Football cultural accomplishment mainly reflects football players' cultural literacy through cultural knowledge, moral character, health awareness, team awareness, self-cognition and learning ability. In this process, the evaluation role of coaches should be taken into account. The evaluation criteria of each coach will not affect the real situation, this part should continue to be considered.

The purpose of building the evaluation system is mainly to measure the actual level of Chinese young students' football literacy through the comprehensive evaluation of various indicators, to reflect the current level of campus football, so as to find out the shortcomings, and to provide detection standards and development direction for the further development of campus football.

5. Summary

The construction of the system is only a tool to measure the implementation of campus football. The key point is to use this "tool" to find out the reasons and influencing factors for the slow improvement of the level of campus football. For example, the influence of parents' support, leaders' support at all levels, funds and coaches' level on students' football quality. The conception of the evaluation system of teenage students' football quality is only a preliminary discussion of such a research direction. The specific implementation should be combined with China's football development strategy, so as to better play the role of this system and point out the direction for the development of campus football.

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An Evaluation Model of College Basketball Teaching Quality based on Multimedia

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Abstract: The traditional basketball teaching quality evaluation methods to evaluate performance is low, thus put forward for the university basketball teaching quality evaluation model based on multimedia design, combined with the QFD method to look at the university basketball teaching quality, optimizing evaluation steps, to ensure the accuracy of assessment of the quality, specification of quality evaluation value, finally realizes to assess the quality of basketball teaching, and finally confirmed through the experiment, the college basketball teaching quality evaluation model based on multimedia improved performance compared with traditional model.

Keywords: Multimedia technology; Basketball; Teaching quality

1. Introduction

Basketball is one of the compulsory courses for public physical education in universities. Students mainly master motor skills, and theoretical learning is also an important part of basketball teaching process. Today, with the rapid development of science and technology, the traditional basketball teaching mode cannot meet the needs of social development. The development of physical education, to a certain extent, depends on the progress of educational technology, so the introduction of multimedia into the field of basketball teaching is the inevitable reform of contemporary physical education. In today's information age, computer-centered multimedia technology, software technology and network communication technology are rapidly rising and booming. Their applications have spread all over the society, constantly influencing our lives and changing people's thinking, consciousness and tradition. Multimedia provides the most ideal teaching environment for teachers because of its features of pictures, texts, sounds and even moving images. The traditional evaluation method of college basketball teaching quality has some problems such as low evaluation efficiency. Teaching practice has proved that the appropriate USES the multimedia teaching, is advantageous to the breakthrough teaching difficulty, make abstract questions like, is helpful to arouse the enthusiasm and initiative of and stimulates the student to study, but also to improve the efficiency and effect of classroom teaching, at present colleges to develop multimedia teaching as one of the important development direction of teaching reform, flower vigorously develop various practical multimedia teaching software. Physical educa-

tion teaching field is no exception, it is a strong imitation of teaching, the requirements of intuitive, image, vivid, specific. Multimedia teaching is a modern sports science theory and teaching theory as the instruction, with the help of modern teaching equipment quickly provide intuitive, authentic, accurate and reasonable feedback information, he is different from traditional teaching method, this method is based on the analysis of multimedia college basketball teaching quality evaluation model is put forward, QFD method is put forward through the real-time observation of the teaching quality, the application of data evaluation, analysis of demand and demand trend to establish quality house network, each link of teaching for teaching quality evaluation.

2. Evaluation Model of College Basketball Teaching Quality

2.1. Steps for evaluating basketball teaching quality

College basketball teaching quality assessment algorithm based on multimedia, is based on QFD method by real-time observation of the students, collect students' demand, application data evaluation, analysis of demand and demand trend to establish quality house network, transfer student voice quickly to the service of each link and the dimensions of the service system, so as to improve the quality of basketball teaching in colleges and universities. The basic idea of multimedia quality function deployment (QFD) is that all activities in the teaching process are motivated by students' needs, preferences and expectations. The purpose of improving teaching quality is to design students' needs, preferences and expectations into products and processes through "what to do" and "how to

do". The QFD process is accomplished by a series of column charts and matrices. The shapes of these matrices and charts are very much like a series of houses, so they are Figuratively called "houses of quality", which is the core of the whole QFD process. The structure of the house of quality borrows the architectural appellation, easy to understand and easy to remember, and vividly indicates that the result of QFD method is that students can enjoy high-quality teaching services under the shelter of the quality building. In a large number of teaching applications, this scheme has good applicability. The main structural elements of multimedia teaching "house of quality" are as follows, as shown in Fig.1.
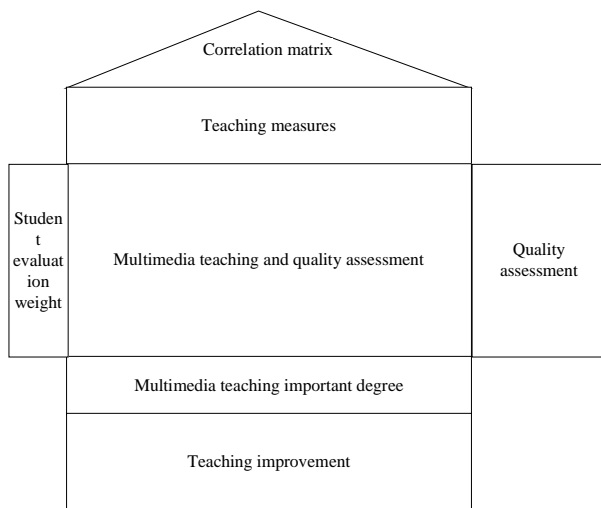

Figure 1. The house of quality multimedia teaching structure

As can be seen from the Figure above, the teaching needs of students can be obtained by means of the survey to obtain the importance of student evaluation Wi, which can be quantified by taking 1-5 grades. On the basis of obtaining relevant data, the corresponding calculation method is used to solve the student evaluation weight Wbj. Through the above calculation, we can get the weight of student demand Wbj, and substitute the obtained weight of student demand into a series of calculation formulas to obtain the teaching quality evaluation level.

From the perspective of statistics, it is necessary to carry out the proposed quality assessment method. The purpose of multimedia based college basketball teaching quality assessment is to improve the teaching ability of teachers. The system design includes four modules: login, student evaluation, teacher query, leadership query and background management. The system module is shown below.
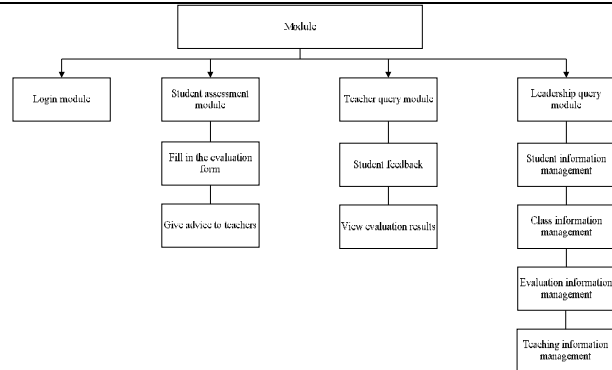

Figure 2. Multimedia college basketball teaching quality evaluation system module

Login module. After the user login, need to user action mode and management mode of a detailed analysis, the overall grasp, and then will work in detail for many times to communicate. Among them, the login module includes the following parts: student assessment module, data management module, leadership query module and teacher query module, which have different display forms for different users.

Student evaluation and teaching module. This module includes students filling in evaluation forms and giving Suggestions to teachers. Students can enter the student evaluation module through the login module, evaluate the teaching quality of teachers, and collect the evaluation results.

Teacher query module. After collecting teachers' evaluation results in the student evaluation module, teachers can log in the module to view the evaluation results and inquire students' opinions, so as to accept students' opinions in time and improve teaching methods.

Leadership query module. Leadership inquiry module includes: student information management, class information management, course information management, evaluation information management, teaching information management. Teachers can know the first information of teachers and students in the first time through this module.

In order to improve the teaching quality of teachers, the hardware structure design of the system shall be analyzed from the four modules of login, student evaluation of teaching, teacher inquiry, leadership inquiry and background management. According to the collected evaluation data to judge the teaching quality, improve the accuracy of teaching quality evaluation of teachers, so as to complete the hardware module design.

2.2. Evaluation standards for college basketball teaching quality

To evaluate the teaching quality of college basketball courses, and to ensure the accuracy of the evaluation, the

evaluation standards of college basketball teaching quality are designed.

Six experts were selected, and the correlation of basketball skills, basketball training, management and other courses in cultivating excellent graduates of information management and information systems was given according to the score from 0 to 9. The correlation degree was placed on the roof of the room in the primary evaluation quality house model.

The relationship between the ability to train graduates and the curriculum should also be given by experts and written into the room of the primary assessment quality house model.

At the same time for the freshman to senior students about basketball demand questionnaire survey, statistical students demands for the ability, with 1 to 5 to represent the students' ability to demand and its different levels, in order to avoid one-sided sex, single people will fuse professional students are divided into four types and each type of average (for the convenience of round take its integer), the demand for various abilities by W1 freshman CRi's important degree of the vector; W2 is used to represent the importance vector of the iCR of all ability demands of sophomore students. Use W3 to represent the importance vector of CRi of junior students' needs for various abilities; W4 is used to represent the importance vector of CRi for each ability requirement of senior students, and it is written into the left wall of the primary assessment quality house model.

Basketball teachers are required to evaluate the market competitiveness of basketball courses in China by analyzing and comparing the gap between the information management major of our school and other universities in the three aspects of talent cultivation, development of science and technology, and service to the society, so as to reflect the competitiveness of basketball courses in China. In other words, C1i, C2i and C3i are given, and the above integer is used to represent the market competitiveness of basketball courses.

$$S=\sum_{i=1}^{m} w_i u_i = W^T U \qquad (1)$$

Since the improvement of students' ability demand satisfaction level is obtained through the improvement of their ability and quality target value, which to a large extent needs to be obtained from the curriculum, it can be seen that the improvement of students' ability demand satisfaction level needs to be improved on the curriculum. The linear relationship between UI and the actual improvement level of the curriculum is set as follows:

$$S=W^T RY = (R^T W)^T Y = V^T Y \qquad (2)$$

Where V is the absolute weight vector of course features, written in matrix form:

$$Y=P^T X = PX \qquad (3)$$

According to the above formula, the weight of demand for basketball courses can be obtained. We can see that among all abilities, enterprise strategic planning ability and organizational management ability are the most important, which are the most needed ability for students majoring in information management and information system, and also the main goal S of cultivating talents majoring in information management. By according to the student ability requirements and course characteristics of correlation matrix, we can get the important degree, in the course, the greater the important is that the more important the course, important degree of these courses are between 6 to 9, we can infer that the courses are very important, and then by the course between the autocorrelation matrix Y can see these courses is very strong, the correlation degree between some of the course is another first class. Basketball technology is a very important course, in order to improve students' overall satisfaction with ability needs in a short time and most effectively, we must strengthen the importance of basketball courses and improve students' satisfaction with them. From a qualitative point of view, this course is the leading course of basketball course. If the foundation is not well laid, it will have a great impact on the subsequent learning of students and hinder the cultivation of students' abilities in various aspects.

2.3. Realization of basketball teaching quality assessment

The implementation of the quality assessment model is the product of the combination of multimedia development and artificial intelligence technology, so the generally said quality assessment is often similar to a normal mining process. The whole process can be divided into three stages, namely, data preparation stage, data evaluation stage and evaluation result display. The workflow is shown below.
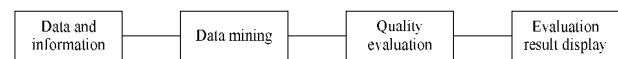

Figure 3. Quality evaluation system work process

As can be seen from the workflow above, the workflow includes the following steps:

Data information: fully understand and analyze the application domain knowledge, and define evaluation objects and objectives. In the basketball course, the professional knowledge helpful to the process of data evaluation is obtained by analyzing the satisfaction of students in the basketball course and added to the knowledge base of data evaluation tools, so as to determine the data information of student evaluation

Data evaluation: search all internal and external data information related to basketball courses, select data suitable for data evaluation application, conduct data preprocessing, fill the missing fields, delete invalid data, etc. The functional types of data evaluation are divided into

verification type and discovery type. Verification type refers to the hypothesis first proposed by the user; Discovery type refers to the use of data evaluation tools to discover facts, trends, classifications, etc. unknown to users from the data, or the correlation and data deviation between regression models and database records. select the appropriate data evaluation algorithm and select the corresponding algorithm according to the type of data function and characteristics of data. Common algorithms include artificial neural network, decision tree algorithm, set theory algorithm and genetic algorithm. Scalability, accuracy. Interpretability to evaluate the selected algorithm and performance. Carry out data transformation, organize data according to the specified method according to the target, function and data evaluation algorithm of data, get the qualified variables according to the known knowledge, transform the data type and map the data to the feature space that is easy to find the solution.

Teaching quality evaluation. The teaching quality was evaluated on the purified and transformed data set.

Evaluation results Output the result of evaluation to evaluate the data interpretation and evaluation, into will eventually be users understand knowledge and comprehensive analysis, has been of the knowledge and existing knowledge synthetically, check and deal with the conflict between them, the final result by the method of simple report to the user, and evaluate the performance of the process. The main steps are shown below.
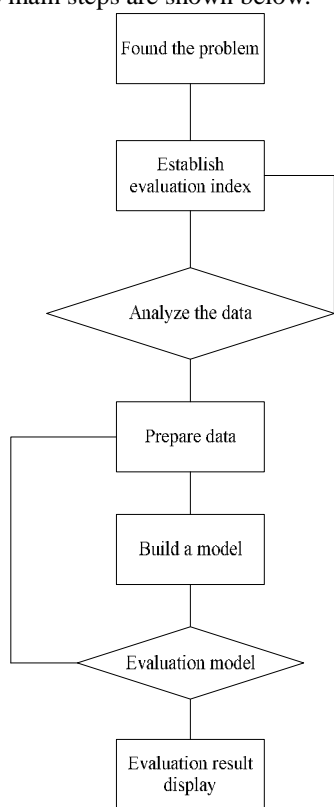

Figure 4. Main steps of teaching quality assessmen

Through the above steps to evaluate the quality of efficient basketball teaching, the evaluation efficiency can be effectively improved and accurate evaluation results can be obtained. Teachers can timely adjust the teaching content and improve the teaching quality.

3. Experimental Results and Analysis

In order to verify the accuracy of basketball teaching quality evaluation, a simulation experiment is carried out on the college basketball teaching quality evaluation algorithm based on multimedia. A basketball theory teaching class of 400 people, divided into control group and experimental group of 200 people. The teaching of the experimental group adopts the "multimedia optimization combination method" designed in this topic, which combines the multimedia theory teaching with the traditional theory teaching form organically. The experiment lasts for 4 class hours. The control group adopted the conventional theory teaching method. At the end of the experiment, the difference of teaching effect was analyzed. After analyzing the students' listening to the lecture, the results are shown in the Figure below.
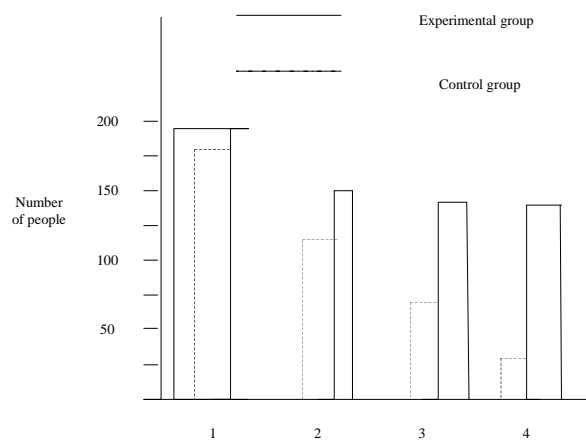
Figure 5. Analysis of experimental results

It can be seen from the results that the experimental group is in a good condition compared with the control group, indicating that the optimized combination teaching of multimedia can focus students' attention, attract students' interest, improve classroom teaching efficiency and play a good interactive role. The application of multimedia technology and the adoption of vivid and lifelike teaching methods are the means to improve students' interest in basketball theory teaching and enhance the teaching effect. In the teaching of basketball theory, the rigid blackboard writing and monotonous explanation often make students feel extremely dull and boring. Every now and then use the static wall charts or model may not be able to make students to understand human

activities in the complex dynamic process, and the use of multimedia technology can be used for real or animation to be displayed in the form of, such as about the development of basketball and basketball related departments, can be inserted into the relevant images and text animation effects to decorate, make the students to see after the be clear at a glance. Some of the highlights of the broadcast, so that the students remember, improve the ability to appreciate a high level of competition, both to broaden the horizon, and edify the sentiment. In addition, the interactive function of multimedia enables students to take an active part in teaching, from passive learning to active learning, thus greatly mobilizing students' learning enthusiasm. This is of great help to improving students' learning quality, improving learning environment and enhancing learning effect.

4. Conclusion

Traditional college basketball teaching quality evaluation methods to evaluate efficiency is low, in the computer are so popular today, the condition of secondary school physical education teaching with multimedia technology basic has been mature, in our country, the multimedia technology is applied to the sports field is relatively late, although have a large number of research efforts, in such aspects as training, wonderful, scientific research, management have also made many important achievements. Therefore, an evaluation model of college basketball teaching quality based on multimedia is proposed. By observing the teaching quality in real time and establishing the quality house network, this method evaluates the teaching quality of each link of teaching, which greatly improves the evaluation efficiency of college basketball teaching quality.

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Application of Big Data in College Sports Information Management

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Abstract: With the rapid development of big data and artificial intelligence information, the university sports information management system will also face reform. Introducing big data into the university sports education management will be conducive to the application and development of educational concepts and teaching means, and effective personnel training. Through the influence of big data, this paper constructs a system of big data, integrates the sports information management system based on big data platform, and optimizes the training mode of sports talents.

Keywords: Big Data; Information Management; Colleges and Universities; Sports

1. Introduction

In October 2016, the Central Committee of the Communist Party of China and the State Council issued the Outline of the "Healthy China 2030" Program of Action to promote the construction of Kang China. With the advent of the era of national fitness and the development of the sports industry, professional talents in sports management and sports rehabilitation are especially in short supply. Universities and colleges should complete the training of innovative talents. Specialty setting and personnel training should aim at the society. Needs and people's needs, which requires great changes in school-running mode, teaching plan, curriculum system and training ways, in order to expect the sports management information system to have the ability of big data guidance of health sports education [1-3]. At the same time, the current growth of college sports health data is very fast, facing the traditional sports management information system with weak expansion ability, it seems that it is somewhat inadequate. Sports management information system needs to support the processing ability of massive data and unstructured data, in order to improve scientific decision-making and teaching management efficiency [4-5].

With the rapid development of information technology such as big data in cloud computing, this paper introduces information technology such as big data in physical education teaching process, and puts forward the research of University Sports Management cloud information system based on big data. It will rely on big data and integrate high-quality sports resources, build a big data environment for physical education, build a big data platform for university sports management cloud information, and upgrade the Department of university sports management information. It is of great significance to cultivate the

sports talents needed by the society, share the big sports data and cooperate with innovation.

2. The Dilemma of College Sports Development in the Age of Big Data

Compared with the previous generation of College students, the college students in the new era with the old concept of physical education and the aging education mode, mainly after 00, have relatively superior living conditions, a wide range of knowledge, precocious thinking and independent personality. They have typical thinking mode, life concept and behavior mode in the Internet era. However, many colleges and universities still follow the indoctrinated teaching mode, only pay attention to technology professors, teaching methods and contents are seriously lack of pertinence.

College students'physical fitness is declining, their physical fitness is weak, lack of sports ability and consciousness of long-term physical exercise is a practical and applied subject. The physical education courses offered by universities are compulsory for all students to participate in. The ultimate goal of learning physical education courses is to apply them to daily physical exercise and exercise, but college students' physical education is a practical and practical subject. The declining trend of quality and health has not been curbed. The irregular dietary habits, Internet addiction and less sports consumption are all the important reasons for the decline of College Students'physical health. One of the most important factors is that nearly half of the college students do not actively participate in fitness exercises. When most of the students still stay in the stage of "asking me to exercise" in physical education class, most of the physical fitness test work in many schools is to complete the targets and tasks issued by the state or superiors, and stu-

dents have not really formed a good attitude towards physical education and persistent exercise habits.

With the development of campus information technology, the application of various intelligent terminal technology, cloud computing technology and big data technology, the comprehensive quality requirements of college physical education teachers have been raised to a new level. Technical quality has become an important factor hindering the innovative development of physical education teachers. Situational design ability of online physical education curriculum, innovative ability of interactive physical education teaching methods, management ability of sports elective club form and so on are new challenges faced by college physical education teachers in actual teaching activities.

3. The Role of Big Data in Sports Information Management

Active application of information is information management. Quantitative data analysis of large data integration management platform can excavate the value of these data itself. Using big data and cloud computing technology in school physical education management, we can extract and analyze relevant data, discover potential value, and put forward predictive guidance to deepen and improve supervision. In the past, classroom teaching, extracurricular activities and sports training in physical education have been three independent systems. It is common that they are separated from extracurricular teaching and practice. Big data technology makes all kinds of sports data of the three systems related vividly. Through big data technology, discrete data such as students'fitness status, sports behavior and habits can be collected by active and automatic way. On the one hand, it can help students realize self-health monitoring and physical exercise analysis. On the other hand, teachers can not only correct these information in real time. Correcting students'wrong exercise behavior can also make corresponding adjustments to the curriculum design, making it more pertinent and predictable, greatly improving the teaching efficiency, so as to truly construct an effective cycle model of in-class guidance and in-class support.

Big data technology can promote the development of physical education teaching, change the traditional evaluation model of physical education curriculum, and effectively expand the educational function of physical health testing for college students. In the past, because of the inability to grasp students'daily exercise behavior, the sports evaluation system in Colleges and universities can only be confined to physical education, the National Standards for Students' Sports Health and students'sports events, etc. It is confined to the evaluation methods of practical skills assessment and achievement attainment. Big data can capture students' daily sports behavior tra-

jectory, and the evaluation index can be expanded to personality and physical fitness. Ability, knowledge and skills, practical skills, willpower, judgment and other aspects, fully respect the individual differences of students, the implementation of diversified assessment standards is more conducive to the cultivation of high-quality talents. At the same time, big data can optimize and adjust the relevant content of physical education curriculum by understanding the indicators of students, so as to guide students in all aspects of physical fitness, and ultimately achieve the improvement of College Students'physical health level and establish the concept of lifelong physical education.

4. Design of Big Data Information System

The construction of University Sports Management cloud information system based on big data and the mining of existing sports resources data will provide support and services for various teaching and learning applications that need sports resources data. According to the functional division, it can be divided into three functional subsystems: (1) data acquisition and monitoring, mainly to obtain the information of past sports resources, and to collect real-time data of existing University Students'physique. The use of 5G, WIFI, Internet technology to achieve stable, reliable, secure network channels, data collection and integration. (2) Big Data Processing System: The big data system of sports resources information includes data support, data exchange and system integration, operation and maintenance system, and the core subsystem of intellectualized instruction, etc. (3) Big data application management: Big data application management is the application layer core of management of University Sports Management cloud information system based on big data, and is the key to realize sports management and sports teaching.

Data Warehouse Design: This project is different from the traditional dimension design of data warehouse, mainly including dimension model, ODS (operational data store), OLAP and so on. The data warehouse construction of this project follows the following steps: building model based on big data dimension of College sports, including aggregated data, centralizing sports data sources, supporting college data over the years, and maintaining data consistency. In order to improve system access efficiency, data partitioning technology is fully utilized in project design, and storage performance is exchanged by space. OLAP supports multi-dimensional data analysis and query, establishes cube data model; data extraction set completes the process from student physical data collection, aggregation to ODS, integration to master data table; visualization module visualizes the system data structure relationship through virtual simulation. The idea of integrating large data with data warehouse greatly improves the query efficiency of informa-

tion management system, and also realizes the transformation to deep data. This project uses Mon DB non-document database system between application layer and data warehouse, runs aggregated data and pretreatment and develops system interface, establishes relationship between large data warehouse and MonDB, completes batch real-time loading and updating of sports classification data.

5. Concluding remarks

In the era of big data, the change of physical education teaching in higher education is not only the traditional form of teaching and learning, but also the change of the inherent teaching mode of thinking and the change of management mode of thinking, which is exactly what the current physical education teaching in Colleges and universities needs to change urgently. "Today's education and teachers don't live in the future, and future students will live in the past," conforming to the development of the times and daring to try, this will be a new field that physical education workers in the era of big data are trying to open up.

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College Students Physical Education Reform based on The Concept of Lifelong Physical Education

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Abstract: In order to further promote the college physical education reform and development, combined with lifetime sports concept study of contemporary college students' physical education teaching reform mode, through to the current college physical education teaching quality assessment and the teaching evaluation standard, standardize the reform direction, and according to the evaluation results of university sports teaching mode is optimized so as to achieve with the goal of lifelong sports concept of college students' physical education teaching reform. Finally, through the actual investigation and research, it is proved that the reform method of college students' physical education based on the concept of lifelong physical education is more practical than the traditional physical education method.

Keywords: Lifelong sports philosophy; Teaching reform; Reform; College students

1. Introduction

In recent years, China's colleges and universities keep expanding their enrollment, and all of them have achieved rapid development to some extent. However, there are still obvious deficiencies in terms of physical education course teaching in colleges and universities, which is difficult to meet students' needs and is not conducive to the cultivation of students' lifelong sports philosophy. The idea of lifelong physical education is the long-term goal of modern college physical education, which has a far-reaching influence on the reform of college physical education. With the development of society and the deepening of education system reform, the concept of lifelong education has become an important guideline for China's education work. The implementation of the concept of lifelong physical education in the reform of physical education in colleges and universities can not only comprehensively improve students' physical and psychological quality, but also play an important role in promoting college teaching. Based on the questionnaire survey and analysis of 200 students in a certain university, it is found that there are some problems in PE teaching in secondary vocational schools and the cultivation of students' lifelong sports consciousness, and corresponding Suggestions are put forward. Under the concept of lifelong education, the concept of lifelong physical education is established, which can also change the content and goal of traditional physical education in universities. With the rapid growth of the number of college students in our country, the importance of physical edu-

cation begins to show itself, which plays an important role in improving the physical quality and physical and mental health of college students. Therefore, it is necessary to reform in combination with the deficiencies in the current college physical education, change the traditional teaching concepts and methods, strengthen the application of the concept of lifelong physical education in college physical education, guide students to strengthen exercise, and consciously participate in sports to give full play to the real role of sports. Under the influence of traditional physical education, colleges and universities do not attach importance to physical education, do not have time to exercise, teaching ideas are backward and students' awareness of physical education is weak. With the production and development of colleges and universities sports, lifelong education organic melt into colleges and universities sports teaching, in the content of sports teaching and has a certain influence on targets, lifelong physical education is also one of the direction of the reform of school physical education, it is not only beneficial to the students set up the goal of lifelong exercise, and conducive to the students' all-round development of body and mind. The concept of lifelong education is a kind of self-education, interactive education and social education. As the backbone of the future construction of socialism, the physical and mental health of college students is particularly important. For teenagers entering the university life, their physical and mental development is still in a stage of continuous development. Modern society demands that we should not only have professional skills, knowledge, and need a good physical and mental

quality to cope with the sudden change, in order to make students better adapt to the society after graduation, meet the needs of society, colleges and universities must strengthen the students' physical and mental education, guided by the concept of life-long sports ideology, PE teaching reform. To stimulate students' enthusiasm for sports learning, so as to improve their physical and mental quality.

2. Reform of College Students' Physical Education with the Concept of Lifelong Physical Education

2.1. Evaluation of contemporary college students' physical education teaching quality

The concept of lifelong sports emphasizes "lifelong". The whole process from birth to death involves sports learning and exercise, which is the lifelong goal of sports. Physical exercise is regarded as an indispensable part of people's life. The concept of lifelong sports includes two aspects: the initiative and autonomy to participate in physical exercise, and long-term adherence; Receive professional physical education and physical instruction regularly and carry out scientific exercise. The application of the concept of lifelong sports can stimulate people's awareness of lifelong physical exercise, cultivate their good exercise habits, influence people's ideas and ideas imperceptibly, form a kind of sports thought, and improve their sports ability, so it has very important practical value. Therefore, the evaluation of the contemporary college students physical education, the distribution of questionnaires to statistics, the results are shown in the table below.

Table 1. Results of college students' physical education questionnaire survey

Project	Boys %	Girls %
Like sports	82	9
"Three main" teaching	56	32
Sports awareness	65	26
Play sports regularly	60	28
Not playing sports very often	4	8

As can be seen from the above table, the goal of college physical education teaching is still relatively narrow, and the main purpose of teaching is to enhance students' physical fitness, without realizing the importance of cultivating students' lifelong sports concept. Therefore, college students do not realize the role of lifelong physical education, in physical education is only to complete the task, lack of sufficient physical exercise consciousness. In addition, although there are exercise activities in spare time, exercise is relatively rare. After graduation, students have little awareness of sports, which makes their sports ability decline. It is not conducive to the imple-

mentation of the concept of lifelong sports and has a serious impact on students' physical health.

In the process of China's traditional sports teaching evaluation, because under the influence of exam-oriented education and other factors, therefore, even in the evaluation of physical education curriculum still USES the quantitative score standard examination method, the key for students to evaluate the physical examination results, and for all the students are using the same evaluation method. Obviously, this kind of quantitative assessment with the score as the only index is not scientific and ignores the individual differences among students. Different students have different physical qualities. Therefore, for the individual students, it is difficult to truly reflect the progress of the individual students by the way of score quantification, and it also greatly discourages the enthusiasm of the students in the study of physical education courses. It is imperative to reform the teaching evaluation method, and it is necessary to abandon the one-size-fits-all evaluation method, and to construct a scientific and comprehensive physical education evaluation system, which is to insist on the combination of qualitative evaluation and quantitative evaluation, and the combination of process evaluation and summative evaluation. Adhere to the objective, fair and scientific evaluation principle, change the traditional single technical examination assessment mode, the use of comprehensive evaluation methods such as three-dimensional evaluation method, that is, the sports test results of students, the cultivation of sports philosophy and the improvement of personal performance as the evaluation object, more comprehensive and more scientific.
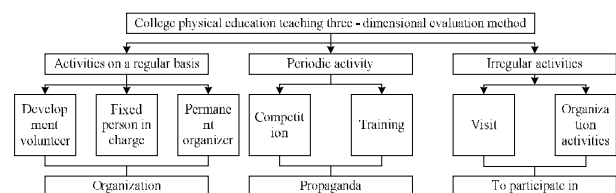

Figure 1. Three-dimensional evaluation method of physical education teaching

Traditional sports teaching too much emphasis on sports competitions, sports big department of sport curriculum contents belong to the competitive projects, athletics project general requirements are high, not only the difficulty of movement big, also requires action, the quality of this system to some poor students is a challenge, physical exam content was more strict, there exist some system is poor and weak ability of students, that is why this part of the students dare not interested, and even fear of physical education curriculum, especially the physical examination, many students in order to cope with the exam, reluctantly, physical education classes, this kind of psychology is not only conducive to the students' physi-

cal education learning, can't cultivate students throughout the body The sense of nurturing. Health does not only mean the absence of physical defects and diseases, but also requires students' mental and physical health, and satisfaction is the real health. Colleges and universities sports teaching can be divided into two kinds of teaching modes, tangible and intangible, physical teaching model is mainly for students physical exercise, while the intangible sports education is to reduce the students' life stress and eliminate students' psychological effects, in colleges and universities sports education, no attention to the cultivation of teaching thought, modern teaching, the teachers only pay attention to students' physical exercise, thus overlook the students comprehensive physical exercise, and no guides the student to set up the faith of lifetime sports, to the all-round development of students are not.

2.2. Optimization of college physical education teaching model

When carrying out the university physical education work, we should not only pay attention to the improvement of students' physical quality, but also strengthen students' awareness and ability of physical exercise, gradually infiltrate the concept of sports culture, and make students pay attention to sports learning. In reform of college sports teaching, teachers should change teaching idea, strengthening its lifetime sports consciousness and initiative to understand the relevant knowledge of sports theory, and combining with the practice, let students to master correct gist movement technology at the same time, also can understand the modern sports theory of knowledge and learning methods, it is the fundamental aim of lifelong physical education. The teaching mode of college physical education is shown in the figure below.
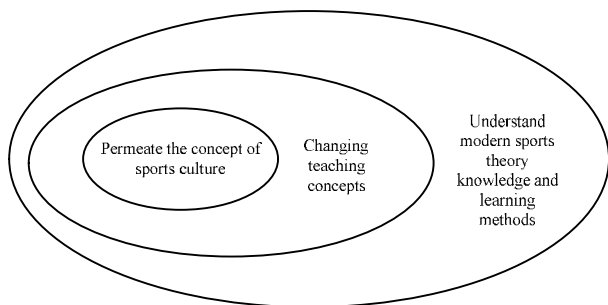

Figure 2. College physical education teaching model

Therefore, PE teachers should take the initiative to innovate and find suitable PE teaching methods for college students, so that students can timely grasp the latest sports information and strengthen their interest in PE learning. At the same time, teachers should also strengthen guidance, help students form a sense of lifelong sports, spread the idea and culture of lifelong sports to students, and stimulate students' thirst for knowledge on

the basis of mastering students' physical and mental development, so as to promote the reform of physical education. Sports interest means that people are willing to take an active part in physical exercise and explore sports knowledge. In the rich social practice, people's interest is easily stimulated and they are willing to take the initiative to learn. College students have a variety of sports interests. Some students take the initiative to take part in exercise based on their interest in a certain sport, but some students do not. The concept of lifelong physical education is permeated into college physical education. Teachers must pay attention to the cultivation of students' learning interest, let students take the initiative to participate in physical exercise, and improve their learning interest. For example, in endurance running, students' endurance and perseverance are very important, but the learning and training process is rather boring. Teachers can use some teaching methods to divert students' attention. Therefore, in the teaching process, teachers can organize diversified sports activities, tap students' interest and potential from multiple perspectives, and apply various methods such as explanation, demonstration, games and competitions to the classroom, so that students can give full play to their sports talents. Only in this way can students' physique be improved and their interest in learning be cultivated, so that sports training can become students' interest, which is conducive to the realization of teaching objectives. The content of physical education is mainly shown in the following figure.
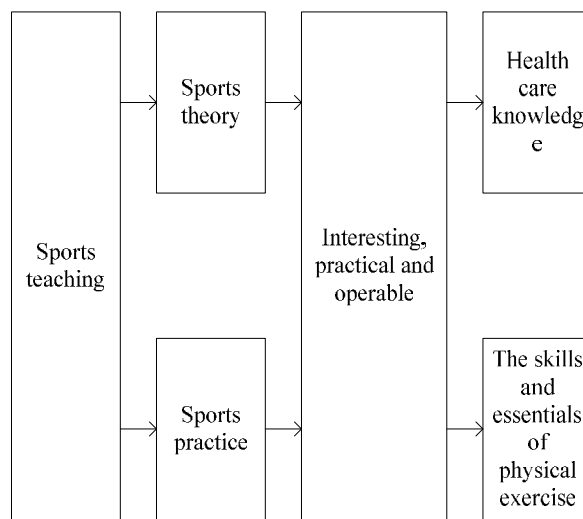

Figure 3. Content of physical education teaching

The content of physical education teaching should be combined with the actual needs of students, and the traditional classroom teaching should be innovated to improve the fun, practicality and operability of the classroom, so that students can experience the fun of physical exercise in the training and consciously form a lifelong

sports awareness. Therefore, when setting PE course contents, swimming, sports dancing, female self-defense and other courses that students are interested in can be appropriately added. And when determining the content of classroom teaching, the teacher must demand to the needs of society, school and students' physical and mental characteristics are taken into account, design more diversified teaching content, let the students know the necessary knowledge of health care, sports injury treatment knowledge and sports skills and knowledge such as main point, international rules of the game, ensure that students can benefit for life. At the same time, teachers should also constantly enrich their teaching methods, and apply slides, movie clips, sports broadcast and other contents to broaden students' scope of knowledge, and actively guide students to master the correct methods of physical exercise, which plays an important role in improving the efficiency of physical education.

2.3. Realization of teaching reform

In the traditional teaching mode, teachers are usually the main body of learning. Teachers arrange and allocate courses according to their own teaching habits and needs, and offer traditional lecture-based teaching in terms of teaching methods, which is known as "cramming" teaching. Obviously, this kind of teaching mode for middle school students to learn the subjectivity of deprivation, truly reflected, and cramming education teaching mode also ignores students' individual differences, in violation of the principle of education of students according to their aptitude, is not conducive to stimulate students' learning initiative, students lose interest to PE course learning, learning efficiency is. Therefore, for the physical education teaching in colleges and universities, the teaching thought should be changed firstly. Teachers should fully realize that students are the main body of learning, and teachers are the organizers of teaching and the administrators of class, all of which serve for students' learning. Second, the transformation of the mode of teaching, abandon the traditional backward teaching mode, in the new teaching form of cooperation, to explore and multimedia, to stimulate students' learning enthusiasm and subjective initiative, in terms of teaching content, can be appropriately increased some popular sports, thus meet the demand of students to the study of different sports events; Finally, in the teaching process, teachers should respect students' personality, treat each student fairly, care about students' life, strengthen the relationship with students, and be their teachers and friends. Therefore, the implementation process of teaching reform is shown in the figure below.
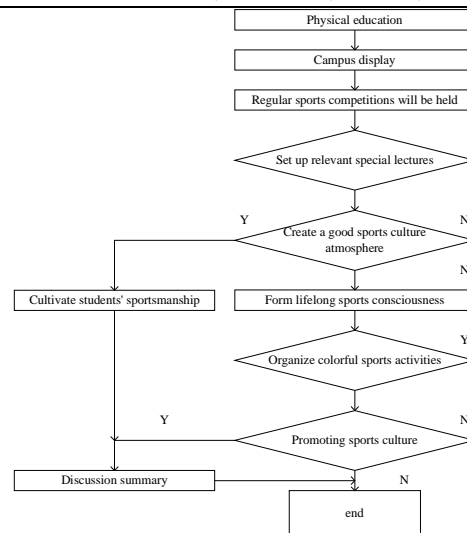

Figure 4. Implementation process of teaching reform

As can be seen from the above process, physical education teaching can also expand in-class teaching to extracurricular teaching. Sports pictures and posters can be displayed on campus, sports competitions can be held regularly, and special lectures can be held, etc., so as to cultivate students' lifelong sports awareness imperceptibly. In the university campus also must create the good sports culture atmosphere for the student, this is the quality education and the lifelong sports idea request. Sports culture and sports knowledge culture belong to the campus sports culture, which has an important impact on the cultivation of students' spirit of unity and cooperation, patriotism, competitive spirit, etc., and can help students form a sense of lifelong sports, which is of great benefit to students' social employment and future life. Therefore, we can organize colorful sports activities on campus in our spare time to publicize sports culture, and set up extracurricular sports groups such as basketball group, volleyball group and shuttlecock group, so that students can participate in different activities according to their hobbies and achieve the goal of physical fitness. Moreover, we should make full use of the PE class time to let students know more theoretical knowledge and create an atmosphere of "everyone participating and everyone exercising" on the campus. At the same time, it is also necessary to impart students' professional competition knowledge and improve their ability to watch sports events. In this way, by watching sports games, students' sentiment can be cultivated, and students' appreciation of sports events can be guided, and their love for sports can be cultivated. If conditions permit, students can be organized to watch sports games, especially some of the sports content of students learning, and let students discuss and summarize the process of the game, improve their ability to watch sports games.

3. Experimental Analysis

In a vocational education center, 200 students are randomly selected, including 100 boys and 100 girls. The content of this questionnaire is based on "sports and health of secondary vocational students", and moderately expanded to obtain the real situation. With this as the core and the matching of targeted questions, the questionnaire has a comprehensive and specific summary in the aspect of lifelong sports. A total of 200 copies of the center point volume were distributed, and 200 copies were collected with a recovery rate of 100%. The survey results are shown in the following table.

Table 2. Survey results

Project	Like the number of %	Don't like the number of %
"Three main" teaching method	20	80
Understanding the role of sports	82	18
Sports awareness	65	26
Play sports regularly	61	39
Ball games	72	28
Martial arts	45	55
Track and field	8	92
Instrument gymnastics	10	90

After the investigation and statistics, it is found that among the students who like sports, boys account for 60% and girls account for 40%, so boys' interest in sports is obviously higher than girls'. As for the "three main" teaching method that is generally adopted in PE class, which is class-based, book-based and teacher-led, 80% of the students do not like it. In terms of the understanding of the role of sports, 82% of the students have a relatively correct understanding, most of the students believe that the purpose of sports is to enhance physical fitness, improve health. As for whether they often participate in physical exercise, 61% of the students often participate in physical exercise, while % of the students do not often participate in physical exercise. 72 percent of the students said they like ball games, 45 percent like martial arts, while only 8 percent said they like track and field and 10 percent said they like gymnastics. It can be seen that students have a clear preference for which sports.

Based on the above survey results and a brief analysis, we clearly find that the PE classroom teaching model is outdated and fails to arouse students' interest in PE, so the classroom loses its due role. Due to the influence of lifelong education, colleges and universities sports teaching target and content of education on all had the very big change, adhere to the principle of physical exercise on extracurricular sports activities, take the student as the main body of teaching can cultivate the students' initia-tive, this can not only change the traditional colleges and universities sports teaching content and target, also can improve the teaching level of sports.

4. Conclusion

With the development of The Times, at present, the world has begun to pay attention to the application of the concept of lifelong sports, and regard it as the main direction of the reform of physical education. China's physical education teaching should also keep up with this trend, recognize the important role of the concept of lifelong physical education in the reform of physical education and teaching, and integrate it into the overall teaching planning of physical education, so that students are willing to actively participate in physical exercise, and cultivate their good physical exercise habits. In this way, while improving students' physical and mental health, it can also cultivate students' awareness of lifelong physical exercise and promote the new development of physical education in China.

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Construction of theLegal Sports Competition Order under Legal Guarantee

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Abstract: On August 8, 2008, the 29th Olympic Games, which attracted the attention of the world, was held in Beijing, China. Sports competition is developing continuously in the contemporary era, which annotates the Olympic spirit. Under the era and pattern of increasingly diversified sports, the construction of sports competition order has begun a new chapter. The law is a powerful weapon to guarantee the legal sports competition order. The construction of the legal sports competition order can mainly rely on the continuous improvement of the legal system, the popularization of sports competition rules and the improvement of the quality of sports players.

Keywords: Law; Sports competition; Construction

1. Introduction

The law is the basis and guarantee for a country to survive and develop. A system without legal guarantees is not a perfect system. A nation without legal guarantees is a nation full of dangers. The law runs through all aspects of national and social development. In the development of sports, the construction of sports competition order is more important than before. Therefore, the construction of the legal sports competition order under the legal guarantee is becoming more and more important. The author mainly analyzes the construction method of the legal sports competition order under the legal guarantee system from three aspects, which are the continuous improvement of the legal system, the popularization of sports competition rules and the improvement of the quality of sports players.

2. Continuous Improvement of the Legal System

The premise of abiding by the law is law. However, from the current situation, China's legal system is still not perfect, which leads to many loopholes after the occurrence of many cases, but also gives many criminals a chance to take advantage of. The importance of the legal system is very obvious. It is the basic criterion that a country or even an enterprise should follow in its survival and development.

Sports is not only the reflection of a country's soft power, but also an indispensable and important part of a country and a nation. A strong sport makes a strong country, while a weak sport makes a weak country. Sports were popular in ancient Western countries. Athens and Sparta,

the two ancient civilizations, became very popular because of the popularity of sports. With the continuous development of the times, sports has become a more indispensable part of daily life. Physical education has become a compulsory course in the curriculum of primary and secondary schools and universities. The state advocates the all-round development of students' morality, intelligence, physical fitness, beauty and labor. Without the perfection and protection of the law, such an important sporting age may no longer exist1. However, how should relevant laws and regulations be regulated? The author believes that it can start from the following three aspects:

Firstly, the makers of relevant laws and regulations should have a deep understanding of the rules of sports competitions and combine sports with law. Although most of the makers of laws and regulations are people who are engaged in law, they don't know much about sports. Based on this, they should arrange some staff to learn more about sports and apply the sports they know to the law, and formulate laws and regulations for the proper sports competition order according to the actual situation. Only in this way can we effectively apply effective laws to sports and create a legal and efficient sports order.

Secondly, people engaged in sports should learn relevant laws and regulations. The law's maintenance of itself is based on its own strength, and law is compulsory. Therefore, people engaged in sports should understand the law, use the law, propaganda law, and promote more people in this industry to understand the law, protect the law and use it.

Thirdly, people engaged in relevant laws and people engaged in sports should be united. Because the completion of this task involves these two aspects. Although our own efforts are important, we should not neglect the external forces. Although those who are engaged in law are proficient in their own fields, they will inevitably be negligent when they face sports order. Therefore, they should combine their own expertise with the strengths of others. The same is true of people engaged in sports. Combining the two organically into an inseparable part can achieve the desired results. Only in this way can we really let the law maintain order for sports and achieve the fairness of procedure.

3. Popularization of Sports Competition Rules

Although the rules of sports competition seem to be far away from the ordinary people, it is undeniable that many people in life are sports participants. This kind of competition, including standardized and strict competitive sports and amateur sports that are more common in life, requires a good operational order. The maintenance of this order requires the relevant personnel and other social personnel to understand the system and regulations. Sometimes participants do not necessarily need to actively learn and master these systems and regulations. In this case, the popularity of sports competition rules is particularly important2. This popularity is extremely significant and involves a wide range of topics, including the popularity of amateurs and the popularity of groups engaged in sports.

The first is the popularity of competitive sports groups. The competitive sports group is people who specializes in sports, that is, a professional group. Their understanding of sports rules exceeds the general group in depth and breadth. Therefore, the popularity for them is also deeper and wider. In view of the popularity of such people, special curriculum standards should be formulated as their compulsory courses, and regular or irregular inspections should be carried out. Other forms of examination can be carried out, and some of them can be eliminated when necessary for internal optimization. Because of the characteristics of this industry, the maintenance of professional order has always been a puzzling and difficult problem to solve. Such a more stressful way can really improve the order of sports. On the other hand, there are other ways. Because people engaged in sports usually have a large amount of exercise, these people can learn through movies and television and other ways after training. This approach is softer than the previous one. They can also be combined. Under the joint action of tough measures and gentle ways, it promotes sports players to jointly build the legal sports competition order.

The second is the popularization of sports rules for amateurs. The popularization of sports rules for amateurs seems simple, and is not as strict as that of competitive sports. However, if we want to achieve the desired results, the pressure is not small. On the one hand, this group is composed of groups from all walks of life. They don't know much about sports, so it is very difficult to popularize. On the other hand, the number of this group is greatly increased compared with the number of people engaged in competitive sports, and the population in all ages is involved. In the process of popularization, tremendous pressure is also evident.

Finally, it is the popularization of sports rules for other social groups. It seems that other social groups are not involved in it, but they also need a simple education. Because other groups in society may become rule breakers. For example, some members of a family may be engaged in sports and understand the rules of sports, while others may become rule breakers.

4. Construction of Sports Competition Order

The author believes that the construction of the legal sports competition order under legal protection mainly includes the following aspects:

Firstly, sports is a way to benefit physical and mental health. Therefore, sports should be popularized throughout the country. Nowadays, the advocacy of sports is increasing day by day, but the effect after its advocacy is often unsatisfactory. Therefore, the following popularity should be further strengthened. Sports for all, this way has no connection with the maintenance of sports competition order in the short term3.However, with the development of time, the order of sports competition in the subconscious of the masses will be greatly improved compared with the past. The way to compete is diverse, including formal competition and informal competition. As the popularity increases, the difficulty of building a competitive order will be greatly reduced. Under the protection of the law, the construction of the legal sports competition order will also be completed. In the process of popularization, we need to pay attention to the relevant methods and techniques, because each person's acceptance of sports is different. Some people like sports, while others don't like sports. In addition to personal factors, external factors are also very necessary for the cultivation of interest. If the way of propaganda is inappropriate, it is easy to cause the resistance of the propagandists, which will be counterproductive. Even under the protection of the law, it is still difficult to achieve the desired results. The protection of the law cannot be accomplished overnight, and it is impossible to bring the people to justice at will. Therefore, the way of propaganda is very important. When necessary, relevant departments can also strengthen their investment in the maintenance of sports competition order. It is also a good and

effective way to make people accept it imperceptibly by giving some small gifts.

Secondly, under the protection of the law, most people should also be allowed to recognize their laws and regulations on the legal sports competition order. The formulation of this law and regulation should be based on the opinions and requirements of the people. Without actual investigation, there would be no real right to speak. Therefore, the formulation of the important contents of the law should also follow and conform to the opinions and requirements of the people. Of course, due to the differences of social groups and their identities and status, the interests of each person and the opinions and suggestions he put forward are also different. On the basis of widely listening to the opinions of the people, we should learn to discriminate. Those opinions which conform to the interests of the public, are justified and reasonable, and should be developed into the will and requirements of the state. Those opinions and suggestions that are self-interest-centered should be retained and explained to the people when necessary. On the one hand, it also meets the requirements of the people; on the other hand, it also protects the people's right to understand, which can keep close contact with the people. The reason why I put forward the opinions and demands that can meet the majority of the people is that China is a big country with a large population, and it is almost impossible for everyone to satisfy the same legal provisions at the same time. Because of this, China's voting method has always been that the minority is subordinate to the majority. The construction of legal sports competition mode under legal protection is no exception.

Finally, the construction of the legal sports competition order should also increase the punishment for those who break the order. The law is the criterion of restraining people's behavior. The reason why some lawbreakers do not pay attention to the law and destroy the law at will also shows that the punishment of the law needs to be further strengthened to some extent. On the one hand, it helps the criminals to realize the power of the law; on the other hand, it can also promote the observance of the law by the whole society, so that the legal sports competition order can exert greater value and effectiveness under the protection of the law.

Increasing the punishment of criminals does not mean maintaining the maintenance of the sports order; on the contrary, it can achieve the effect of punishing one to warn one hundred. This measure can have a great effect. Therefore, this is also an effective measure and method to build the legal sports competition order.

Under the premise of legal protection, the construction of the legal sports competition order can't be achieved overnight, but its future is bright, full of unlimited hope and charm. Sports is an art, and legal sports is a belief, but also a driving force for the healthy and sustainable development of sports. The legal guarantee requires the people to constantly learn to abide by the law, protect the law, use it, and let the law truly serve the people. The healthy development of any business is inseparable from the law. In the process of building the legal sports competition order, the law is indispensable and a powerful driving force for its survival and healthy development.

5. Conclusion

The Constitution is a fundamental law of the country, and the law is also an indispensable part of the state's governance and security. Under the legal guarantee, the maintenance of the legal sports competition order is an important way to ensure the healthy development of sports. In the process, the maintenance of the legal sports competition order will burst out new vitality and charm with the continuous improvement of the law. Law is the cornerstone in the historical development, but also a bright pearl in the long history of development. The law should serve the development of sports, the construction of sports order and the construction of the legal sports competition order. In the process, the law will burst out a new spark of charm. Under the legal guarantee, in the process of maintaining the legal sports competition order, adopting the correct methods and measures will help to achieve the desired better results.

6. Acknowledgment

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Effect of Special Strength Resistance Training on Shooting Skills

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Abstract: Basketball is a fierce competition, skipping and shooting skills has become one of the most effective scoring means of basketball players. In the game, the skipping and shooting skills and other technical action combine together, and it has the advantage f sudden, not easy to defend. Traditional basketball strength training does not improve players' balance, flexibility and other physical fitness. Special strength resistance training can effectively improve the stability of basketball players' jump shot, improve the ability of jump shot effectively, and quicken the jumping speed, so as to improve the shooting percentage significantly. This paper discusses the influence of special strength resistance training on basketball shooting ability and technique, analyzes the principles that players should follow in strength training, and provides some guidance for promoting special basketball training.

Keywords: Basketball special strength training; Training method; Shooting effect

1. Introduction

With the development of modern basketball sports and competitive concepts, basketball games begin to emphasize more and more physical confrontation, explosive body and tactical use [1]. Special strength resistance training is closely related to basketball players' response to catch, hold the ball, jump height, jump speed and shot in sports competition. The characteristics of basketball rivalry require participants to complete fast running, continuous jumping and quick reaction skills in a short time. Speed and strength are the key to win basketball games, strength is an important factor in basketball training, and it is the basis of mastering sports functions. In basketball, completing the action under the strict defense of the other team not only requires cooperation between the teams, but also requires one's own physical quality. In passing and dribbling, the athlete completes a rapid contraction of the muscles in the legs in time to generate the power to drive the rapid movement of all parts of the body. The upper body strength determines the speed and accuracy of the pass, while abdominal strength determines the speed of the turn.

2. The Main Problems in Resistance Strength Training of Basketball Players

Resistance strength training is not given enough attention. Due to the influence of training time and individual ability basis, many basketball coaches do not have enough intensity of impedance strength training, especially when making basketball training plans, they seldom involve professional impedance strength training. Even if they have arrangements, they usually interweave other training plans without systematic and professional training. This is not in line with the trend of basketball today [2].

Resistance strength training methods are too simple. In normal exercise training, strength training is almost always traditional method, such as barbells and squats. On the one hand, it reflects the single strength training method of basketball players. On the other hand, it also makes the athlete's strength training atmosphere too boring, so it is not conducive to mobilize the athlete's training interest and enthusiasm. In fact, when training basketball players' jumping ability, they can also use various methods, such as obstacle jump, multi-stage jump, one-foot jump, frog jump and so on, which is more conducive to improving the effectiveness of training.

Lack of specific strength training. Nowadays, when basketball coaches do strength training, they often use ladder extreme strength training method to develop absolute strength. This conflicts with the special strength training of basketball. At the same time, basketball focuses more on fast strength training and strength endurance training, which are obviously lagging behind.

3. The Important Role of Strength Resistance Training of Basketball Special Athletes

The movement of human body is almost all related to resistance strength, which lays a good foundation for excellent sports performance. Strength and other qualities have a very close relationship, and it is the basis of sports. Strength resistance training is specialized training based on the position of the athlete on the field. Attacking de-

fenders need to develop the strength and speed of shoulder girdle; an organic defender must have strong forearms and a flexible wrist; Breakthrough forwards need to be able to jump at high speeds; Fixed forwards should have maximum jumping endurance; The moving center should have breakthrough athletic qualities [3]. In the competition, under the opponent's tense defense and collision, to complete the effective offensive action, the athlete must have a good explosive force in the leg, and have the ability to make muscle fiber contraction quickly, and generate a lot of power flow, make the body move fast, coherent and effective movement. Strength is the key to the final minutes of the game, when physical energy is used up in the last few minutes.

4. Analysis of the Influence of Special Strength Resistance Training on Basketball Players' Skipping and Shooting Skills

Special strength resistance training can improve the coordination of basketball players' jump shot. Through effective special strength resistance training, it can improve the stability coordination of basketball players in the process of jump shooting. Special strength resistance training can help athletes control their personal connecting of the upper and lower limbs in jump shoot, thus reducing the basketball players the excessive consumption of physical strength and the instability of the body during the jumping shot, improves the effective control and transfer of the core strength of the athletes and promotes the coordination ability of the basketball players when they jump.

Special strength resistance training can effectively improve the jumping shot speed of basketball players. Basketball has a very fast offensive and defensive speed. It requires the player to maintain a relatively fast speed in a series of movements, such as catching, passing, dribbling and shooting. In order to maintain the intensity and pace of the game, the player must apply the effects of resistance properly. This provides a stronger guarantee for shooting percentage.

Special strength resistance training improves the stability of jump shot. Due to the strong antagonism of basketball, the requirement of physical quality and strength of players is relatively high. Especially when the game enters the increasing competition stage, the basketball players' physical quality will decline rapidly, which will affect the basketball players' shooting stability. Effective resistance training can provide more stable protection for basketball players' jump shot. On the one hand, resistance training can strengthen the core muscle of an athlete and ensure the coordination of body posture during the jump shot, finishing the limbs shooting more standardized, smooth and accurately. On the other hand, when basketball players suddenly jump, they need to keep the consistency of their body leaning forward and shooting when catching and shooting, and have a strong control over their bodies. Special strength resistance training can effectively prevent basketball players from sports injury when they jump shooting. High level basketball players with core strength advantage can use their strong core strength to ensure that their body moves in a normal position when moving fast. The stability of the deep muscle groups plays a key role in protecting the athletes, so resistance training can effectively prevent acute injuries such as backache, abdominal strain and pelvic tilt when basketball players jump shooting. At the same time, resistance training can help high-level basketball players to properly control their bodies and enhance their resistance to jump shots. Especially when jumping and landing, basketball players can use their core strength to increase the strength and speed of muscle contraction, reduce the load on joints, and ensure the stability and coordination of landing, so as to prevent injury.

Special strength resistance training increase air-holding ability. Air-holding ability is the ability to stay in the air for a period of time when an athlete jumps. The athlete changes the movement of each part of the body, so that the upper part of the hip joint maintains a certain height in the air for a certain period of time, thereby obtaining time in the air. When carrying out jump shoot, a longer time in the air helps players choose the best shotting time.

5. Principles to be Followed by Basketball Athletes in Resistance Strength Training

5.1. Principle of comprehensive development

As basketball players grow up, it is important to lay a strong physical foundation. Every muscle and joint of a basketball player must undergo comprehensive strength training to train the muscle memory and flexibility of each part of the body and it lays a good foundation for the training and use of special skills [4].

5.2. Principle of interaction

When basketball players are doing resistance strength training, it is necessary to make the movement process of primary motor, coordination muscle and antagonism muscle as consistent as possible with the special movement, so that the training can achieve the best effect.

5.3. Principle of mental control

The psychological state of basketball players in training has an important relationship with their own strength control and training. The emotional state of an athlete is closely related to the effective performance of his power. Athletes must maintain normal emotions and control their psychological factors to complete training tasks.

6. Basketball Special Resistance Strength Training Methods

6.1. Increase leg strength and bounce strength

Different from other sports, basketball players must take special targeted exercises for their jumping training, such as shouldering the barbell and lifting it quickly and slowly. The movement of the barbell requires complete or half squat, which must be repeated three or four times. Attention should be paid to protect the body and prevent physical injury. Conduct full squats and consecutive jumps and the training require a load of 6 to 10 kilograms. In addition, leg strength can be conducted weight training.

6.2. Lower and upper limbs strength training

In basketball training, lower limbs should be based on the biceps and quadriceps. Good jumping ability has great advantages in the course of playing basketball. The strength of the squat will determine the development of the bounce. In training, the half squat should be the main part of the training and properly training should match with the squat. The half squat should be trained on grass or on a blanket, and the speed should be fast, which is conducive to the coordinated development of power and speed. The upper limb training can use barbells for weight lifting exercises. Weight passing, shooting, three-point shooting, and fast dribbling also enhance the strength of upper limb. Basketball players bounce and other sports are very different, according to the characteristics of bounce, choose the right training methods.

6.3. Basketball strength load training

Load training can exercise withstand about 90 percent of the maximum load of their own, and this can comprehensively stimulate their own original strength, but also improve the intensity of exercise strength training in the motor nerve. Although small load training can make the muscle rapid contraction, but the intensity of stimulation is not up to the specified requirements. So in the training, it should do large intensity load exercise as much as possible, cooperate with small and medium load training.

6.4. Waist and arm strength development

Shooting, passing, dribbling, and other movements in basketball require the coordination of upper body strength of the fingers, wrists, and arm muscles. The combined power of an athlete is directly related to the use of these actions. Finger and arm strength exercises include exercises like horizontal lifting weights and push-ups. Core strength exercises include suspension knee lifts and turns, supine leg lifts, repeated abdominal in and holding exercises, arms hanging on horizontal bars, and raising and holding your legs for a period of time. Exercises for abdominal muscles include sit-ups and abdominal leg lifts.

6.5. Improve physical confrontation training

Confrontation exercises can enhance the players' sense of real-time competition and high tension, master the sense of timing such as movement skills and shooting, and use correct methods to match the training intensity with the competition intensity. The specific training methods include shorthanded, arranging fights or more matches, setting up training obstacles and increasing the difficulty of fighting [5]. In various basic technical training, artificial resistance can be created and collision techniques can be improved.

The basketball special resistance training needs to carry out the load control reasonably and arrange the regular training according to the gradual principle, so that the physical strength is in the best condition. Strength training should prevent accidents and injuries. In weight-bearing exercises, we should fully prepare and concentrate on preventing training damage.

7. Conclusions

Special strength resistance training can improve upper limb strength, and special strength resistance training has a good effect on the performance of upper limb strength, which can not only increase its maximum strength, but also improve its speed. Therefore, it has the incomparable advantage of traditional resistance training. Through the research, we further study the effect of special strength resistance to athletes on the level of competitive sports, and it includes different effects on body shape, function, quality and specific technical movements. Because the specific effect of special strength resistance training has been the trouble of coach and athletes. Coaches must update their knowledge reserves in real time, master advanced knowledge and training skills, and carry out modern basic methods and theoretical guidance. In short, special strength resistance training is a scientific, rigorous, meticulous and targeted training method. In view of important influence of the special power of resistance training on basketball players' skipping and shooting skills, the coaches need to develop the basketball sport specific training plan, improve the focus on resistance of special forces training, combined with the general training effectively, core strength training, basketball jump shot skill training, stick to the correct training methods, and promote the continuous progress and improvement of basketball players' skipping and shooting skills.

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Planar Design based on Modern Sports Scene

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Abstract: Aiming at the design defects of modern sports scenes, along with the emergence and rapid development of new technologies, the graphic design of sports scenes is proposed. By using different styles and different graphic design techniques of Olympic venues in different periods, the experiment of graphic design is given. The results show that the sports venues designed by graphic design are larger and more three-dimensional.

Keywords: Sports; Graphic Design; 3D; 3D Animation

1. Introduction

At the beginning of the 20th century, public signs and trademarks have gradually appeared in people's lives. Public utilities and enterprises have begun to pay attention to the external image recognition design, and gradually design their own logos. Coubertin, from an aristocratic family, has a good educational background and high cultural accomplishment, which prompts him to have excellent insight and judgment on future trends. The lessons of the Paris Olympic Games and the St. Louis Olympic Games make the IOC gradually realize the importance of a unique Olympic logo that distinguishes itself from other enterprises and organizations. In 1913, he proposed the design of the Olympic logo. At the Olympic plenary meeting held in Paris in 1914 to celebrate the 20th anniversary of the revival of the Olympic Games, Coubertin explained his logo design idea: red, yellow, blue, green and black five rings, symbolizing the Olympic Movement and the five continents participating in the Olympic Movement, the sixth color is white - the background color of the flag, which means that all countries without exception can be under their own flag. Participate in the competition, and the five interlocking rings represent the people of the world to unite under the banner of the Olympic Games and strive for human progress [1-3]. From the 1990s to the 1950s, graphic design experienced an important period from the arts and crafts movement, the new art movement, the decorative art movement to the modernist movement, which was a period of upsurge and downpour of change [4-5]. The graphic design of the Olympic Games shows various features, mainly through the Victorian decorative style, the natural plant pattern decorative style in the New Art Movement, the poster design with the decorative style and the emblem design with the beginning of modernist design. Design motivation has been changing, from 1896 to 1908 can be said to be the embryonic period of Olympic graphic design, when graphic design is mainly used to publicize the World Expo, people have not yet realized the important role of graphic design for the Olympic Games.

With the development of three-dimensional reconstruction technology, two-dimensional animation scene has been difficult to meet people's visual needs and subjective feelings [1_2]. At present, most of the 3D animation scene reconstruction methods acquire part of the information of the surface of the animation scene, and describe the reconstructed animation scene according to the three-dimensional shape and position in the observer-centered coordinate system. It is difficult to present the depth information of the animation scene. In this case, how to extract all the information behind the animation scene accurately and effectively to complete the graphic design of 3D animation scene has become a major problem in the field of computer vision research, which has attracted the attention of experts and scholars in this field.

2. Motion Scene in Graphic Design

In the 1960s and 1970s, internationalism developed to the extreme. The rational, indifferent and monotonous form dominated the world. Few powerful forces could erase the differences of national cultures and form a unified style in the global scope. Tom Wolfe, an American writer, said angrily in his book From Bauhaus to Our House that "Miss Vandro's principle of"less, more"reductionism has changed the skyline of two-thirds of the world's metropolitan areas." The internationalism style was developed from the modernist movement which originated in Europe before the war, and they have a formal and continuous relationship. The principle of function first, form second, advocated by the modernist movement has been rebelled, and the principle of "less, more" has become a form pursuit and overwhelmed the

principle of function first because of the Democratic design idea of serving the masses. The extinction of individuality and national differences by internationalism style and the lack of human monotonous form have aroused the reflection of the design circles, and a number of pioneers against internationalism style have emerged. These pioneers are the earliest promoters of post-modernism. Pop art, which peaked in the United States in the 1960s, began to rebel against internationalism. After the 1970s, the post-modernist design movement came onto the design stage. Ideologically, the Post-modernism of design is an ornamental development of modernism and internationalism. It mainly opposes Miss Vandro's design principle of "less is more", and advocates the use of decoration in design to obtain rich visual effects, so as to meet psychological needs, not only the pursuit of function. Postmodernist design uses a large number of historical decorative styles abandoned by modernism, and adopts compromise treatment to break the long-term monopoly of modernist and internationalist styles. "Postmodernism uses a lot of classical decoration as its motive, so there are obvious symbols to pursue. Compared with the mixed culture of postmodernism, it should be said that it is very clear and clear. Postmodernist graphic design, in fact, is an improvement of modernism, and the main method is to add decorative and historical content to the design, making it a component of graphic design. Note 10 Postmodernist design affects graphic design.

Figure 1. Prefabricated components for the 23rd modern olympic games in 1984

Switzerland's "New Wave Graphic Design Movement", "Ritero" nostalgic style movement in European and American countries, Italy's "Memphis Group", "San Francisco's Graphic Design Movement" and new schools of computer graphics design have emerged. Since the 1980s, computer graphics technology has been introduced into graphic design in the era of computer and digital image, and has undergone tremendous changes.

Graphic design creation space and graphical forms have been greatly expanded, people began to use computer-aided design to efficiently complete the design, publishing, printing work. The 1984 Los Angeles Olympics first used computer graphics technology to design emblems, posters and other items. As shown in Figure 1.

3. Plane Design of 3D Animation Scene Based on Modern Sports

Assuming that (u, v) represents the sub-pixel coordinates of point P in the animated scene image, () X w, Y w, Z w represents the three-dimensional coordinates of corresponding points in the world coordinate system of the animated scene image, the normalized three-dimensional coordinates x D in the camera coordinate system under the radial and tangential distortion of the animated scene image can be calculated by using the sub-pixel coordinates in the animated scene image. When a camera captures the depth image of an animated scene, it usually produces some noise due to the influence of the device itself or the measuring environment, which has a great negative impact on the later calculation. Therefore, first of all, it needs to denoise the original depth animated scene image; s'I represents the first dimension of the three-dimensional space vector s of the animated scene image; s'I represents animation; The nearest neighbor of three-dimensional space vector s of scene image. By solving equation (11), the point cloud can be obtained after image data reduction of animation scene, and based on this, the graphic design of 3D animation scene can be completed.

4. Analysis of Experimental Results

In order to verify the accuracy of the experiment, five groups of animated scene image sequences captured by multi-angle CCD camera are used. The resolution of the animated scene image is 380 x 600 dpi, and the frame rate is 20 f/s. The experimental results of 3D animation scene plane design based on improved method and binocular vision method are described by Windows platform. The improved method and binocular vision method are used to carry out the graphic design experiment of 3D animation scene. The point cloud computing time (ms) of 3D animation scene under the two methods is compared. The comparison results are shown in Figure 1. Through comparative analysis, it can be seen that the point cloud computing time of 3D animation scene using improved method is shorter than that of binocular vision method. This is mainly because in the process of 3D animation scene graphic design using virtual reality technology, grid nodes representing depth information of animation scene are first established in space, and according to the relationship between feature points of animation scene image and point cloud of 3D animation scene. To the three-dimensional feature points of the animated scene

image. ICP method is used to complete the accurate registration of point clouds in animated scene images, and the three-dimensional point clouds of animated scene images are obtained, which makes the point cloud computing time of 3D animated scene graphic design using improved method shorter.

5. Concluding Remarks

The relationship between graphic design and culture is self-evident. Graphic design has been endowed with the function of reflecting social and cultural phenomena, serving specific service objects and communicating information culture since it was separated from the mother body of painting art. Opening up the history of graphic design, we can see that it reflects the social and cultural reality as the art of painting. The Victorian graphic design embodies the aesthetic orientation of the aristocratic class. The tedious decoration and plant decorative patterns from nature are full of book cover design, poster design, packaging design and font design. With the ad-

vent of industrial revolution, the great impact on human life caused graphic design circles began to reflect on the aesthetic orientation of traditional art and the combination of new technology in the mechanized era during the period of Arts and crafts movement.

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