

# Research on the Construction of Application Indicator System of University Sports Informatization Education Resources under the Background of Big Data

Take Jiangxi Province as an example

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**Abstract:** This paper uses literature, questionnaire, expert interview and other research methods. Based on the guiding ideology and principles established by the indicator system, taking the Internet + era education informatization as the background, referring to the relevant experience in the construction of domestic education informatization evaluation indicator system, and based on the analysis of the current situation of the sports informatization education resources in Jiangxi's universities, This paper researches the application of university sports informatization education resources. It takes being convenient for operation as a starting point, through multiple rounds of screening, and finally determines the evaluation indicator system including 5 1-level indicators and 21 2-level indicators, establishes a set of evaluation indicator system for the application of university sports informatization education resources, and analyses the characteristics of the indicator system, which lays a foundation for the realization of regional co-construction and sharing of university sports informatization education resources.

**Keywords:** Sports informatization; Application of educational resources; Evaluating indicator

## 1. Introduction

The rapid development of modern information technology not only changes the mode of production, life and education in human society, but also promotes the development of informatization education resources, which has caused the comprehensive innovation of educational concepts, and has a profound impact on modern educational ideas, teaching methods and teaching means. Especially the modern information technology platforms under the background of big data, the development of education informatization by means of computer, communication and network has become a common viewpoint of the education community. Big data refers to the collection of databases which are based on the Internet platform to acquire, organize, analyze, store and manage large-scale data and materials beyond the capabilities of general software systems. Big data has 5V characteristics (proposed by IBM): Volume, Velocity, Variety, Value and Veracity, which is the basis of modern information education. Sports is an important part of training all-round development talents. The advancement of scientific and technological information under the background

of big data makes the society have higher requirements for sports knowledge, technical skills and sports quality. Constructing a high-quality university sports informatization education resource bank, integrating good sports teaching resources and connecting region co-construction and sharing are the core of realizing sports informatization education. The key to realizing the development of university sports informatization education under the platform of big data is to adopt scientific, effective and reasonable evaluation means, which is of great significance to break through the traditional forms of sports education, reform sports courses, promote the balanced development of students' individualization and informatization, cultivate students' innovative thinking ability, and form a new mode of sports education that meets the requirements of the modern information society.

## 2. Research Methods

### 2.1. Literature method

Through the means of network electronic resources such as China National Knowledge Infrastructure, books and

newspapers, the papers and monographs on education informatization and sports informatization are consulted to provide reference for this research.

## 2.2. Research objects

The research objects are some universities in Jiangxi Province. According to the geographical division of Jiangxi Province, 3 schools in the north (Jiujiang University, Jingdezhen Ceramic Institute, Jiangxi Normal University), 3 schools in the middle (Xinyu University, Yichun University, Jinggangshan University), 3 schools in the south (Gannan Medical University, Gannan Normal University, Jiangxi University of Science and Technology) are randomly selected.

## 2.3. Questionnaire method

A questionnaire survey was conducted on the current situation of sports informatization in some universities in Jiangxi Province (3 in the north of Jiangxi, 3 in the middle of Jiangxi, 3 in the south of Jiangxi). The questionnaire survey also included sending out questionnaires to experts and school leaders in relevant fields to obtain relevant evaluation information. 160 questionnaires were sent out and 148 were recovered. The recovery rate was 92.5%. The reliability of the questionnaire was  $r=0.87$ , and the content validity and organization validity of the questionnaire were both high, approved by experts.

## 2.4. Expert interview method

According to the research task, the relevant experts engaged in sports education and computer direction research were interviewed and investigated, and the primary indicators were screened and supplemented to obtain valuable information on the evaluation of university sports informatization education resources.

## 2.5. Logical analysis method

By screening the contents of the collected questionnaires, indicators are selected and the indicator system is established.

## 3. Guiding Principles for the Design of Indicator System

The research on indicator system of university sports informatization is the precondition to measure the comprehensive development level of university sports informatization. In order to correctly and objectively evaluate the level of university sports informatization, guide the co-construction and sharing of sports informatization education resources, and promote the development of university sports informatization, it is necessary to establish a scientific and effective relevant indicator evaluation system. Only by establishing the index system can we effectively supervise and forecast, and only by establishing a scientific and complete indica-

tor system, can we know the degree of goal attainment through the results of measurement, and can we lay a foundation for effectively realizing the co-construction and sharing of regional resources in sports informatization teaching.

### 3.1. The scientific principle

Scientificity is the most basic principle to be followed in the design of any indicator system. In the era of highly informationized data, the selection of indicators should objectively and comprehensively reflect the actual degree of university sports informatization. All indicators must be organically coordinated to form a system. There can be neither repetition nor omission among them, and they should fully reflect the characteristics of the construction of application of sports information education resources. Too many indicators are cumbersome, and too few indicators will be distorted, it should be gradually improved and perfected on the basis of continuous practice.

### 3.2. The comprehensive principle

The evaluation system should be comprehensive, clear in purpose, clear in level and easy to obtain data on the basis of striving for scientific perfection. On the one hand, the construction of the application indicators of sports informatization education resources should take into account the differences between national conditions and local conditions, and must conform to the national informatization evaluation standards. On the other hand, it is necessary to fully consider the imbalance of information development, and to select the target content according to the actual situation of Jiangxi Province.

### 3.3. The purpose principle

informatization evaluation is an action based on a certain purpose. Different purposes lead to different contents and standards of evaluation. The purpose of establishing the evaluation of university sports informatization education resources is to realize the integration of university sports informatization education resources and the co-construction and sharing of services among regions, improve the development level of university sports informatization, and reduce the repetition and blindness in the process of construction and application of education resources.

### 3.4. The practical principle

Practicality is the core of the indicator system. The selected indicators are required to be practical and easy to operate on the basis of reflecting the evaluation content in an all-round way. The indicator system covers a number of items, which should fully reflect the application level of university sports informatization education resources. The establishment of indicators should not only consider the advantages of one or two items, but ignore

other characteristics, which should be consistent with objective reality.

**3.5. The development principle**

The construction of education resources of university sports informatization is a process of continuous perfection and improvement in practice. Therefore, the construction of the indicator system is also a dynamic process of continuous development and improvement. In the process of selecting indicators, it is necessary to obey to the principle of development and learn from the experience of other regions to continuously correct and enrich the indicators to ensure the timeliness of the indicators.

**4. The Composition of the Application Indicator System of University Sports Informatization Education Resources in Jiangxi Province**

In the research, in order to define the concept of “informatization of university sports”, we have consulted a large amount of literature. In the paper of “Discussion on Establishment Index System of Informazition of Physical Education in Colleges”, Pang Junhua and others put forward the concept of university sports informatization

based on summarizing the concepts of national informatization and education informatization, and considered that university sports informatization is an essential element of university sports system, and made extensive use of information technology in various fields of university sports to promote the process of university sports modernization. According to this concept, combined with the development trend of university sports education informatization based on modern information technology, this research puts forward the concept of big data platform sports informatization. It means that in all fields of university sports education, modern information technology is used comprehensively and deeply to promote the reform and development of school sports education courses and teaching, and to a certain extent to realize the digitalization and networking of sports education and training, sports organization and management, so as to improve the quality and efficiency of sports education. Therefore, the indicator system established in this research combines the representative indicators closely related to university sports informatization under the background of big data to form the application indicator system of university sports informatization education resources.

**Table 1. Basic framework of the application indicator system of university sports informatization education resources in Jiangxi Province**

First level indicator	Second level indicator	Indicator description
Infrastructure U1	U11 The number of computers per capita	(reflecting computer penetration rate)
	U12 The number of multimedia classrooms	(including multi-media venues for physical education)
	U13 Network construction indicator	(reflecting network coverage)
	U14 Campus one card construction	(Whether to develop one card)
Information resources construction U2	U21 Construction of distance education information network system	(reflecting the popularization of distance education)
	U22 Network teaching application platform	(teacher-student network teaching exchange platform)
	U23 Sports network resource database	(game video and action video data, etc.)
	U24 Website links and excellent courses construction among the Ministries of Physical Education in universities	(Co-construction and Sharing of Resources among Regions)
	U25 Sports information database	(the number of basic information bases established by schools)
Information literacy U3	U26 Multimedia software and courseware database	(sports teaching video-on-demand system, electronic teaching plan material, etc.)
	U31 Information literacy of physical education teachers	(teachers’ ability to use information technology)
	U32 Information literacy of students	(students’ basic information ability)
Information technology application U4	U33 Network management personnel	(the practical application ability of informatization)
	U41 Integration situation of information technology and physical education courses	(using situation in classroom teaching)
	U42 Application situation in sports management	(office automation)
	U43 Communication situation between teachers and students by using information technology	(communication by using e-mail and others)
	U44 Construction and maintenance situation of the website of the sports department	(application situation of network)
Management operating mechanism u5	U45 Application situation in competition training and teaching and scientific research	(application situation in the field of sports)
	U51 The investment situation of educational informatization construction funds in universities	(the attention of universities to informatization)
	U52 Investment in education resources base and software construction	(comprehensive reflections on the integration and construction of school information resources)
	U53 Information security guarantee mechanism	(information security level)

## 5. Characteristics of the Application Indicator System of University Sports Informatization Education Resources in Jiangxi Province

At present, the theory and methods of the development of education informatization are still in the discussion stage, and the research on university sports informatization has just started. There is no standardized and unified comprehensive evaluation indicator system and methods on how to scientifically evaluate the application level of university sports informatization education resources. In the course of the research, we refer to the relevant indicators in the "National Informatization Indicators Composition Plan" formulated by the Ministry of Information Industry, and draw on relevant research on the informatization indicator system of universities. For example, in the paper "Discussions on the Evaluation Index System and Evaluation Method of University Informatization", Fei Jun and others divided the content of university informatization evaluation system into six first-level indicators, including informatization emphasis, information infrastructure construction, resource development and utilization, information technology application, talent team construction and information security, and 23 second-level indicators. In the "Research on Establishing University Sports Informatization Index System", Pang Junhua and others proposed five first-level indicators, including information infrastructure, information resources, personnel quality information, information operation mechanism, and information technology application, and 17 second-level indicators. Through consulting the opinions and suggestions of many experts and combining with the current situation of the application of university sports informatization education re-

sources in Jiangxi Province, we have constructed a set of application indicator system of university sports informatization education resources, striving to provide the most comprehensive and objective indicators for the development of university sports informatization, which is conducive to the further evaluation and practice research of the co-construction and sharing of university sports informatization education resources. By constructing this relatively complete indicator system of university sports informatization, we can objectively evaluate the development and application of university sports informatization education resources, which is conducive to effectively monitoring and forecasting the regional co-construction and sharing of sports informatization education resources. At the same time, it also provides a certain reference significance for promoting the integration, co-construction and sharing, and coordinated development of sports informatization education resources among various regions.

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