



# A Comparative Study on the Construction and Management of Information Resources in University Libraries

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**Abstract.** Information resources are the collection of available information formed after the management of various media and forms of information including text, audio/video, print and electronic resources. The information service capability of a library depends on the degree of its information resource construction. Information management and its knowledge transformation capability are the prerequisites for cultivating the core capability of the library. This paper compares and analyses the information resources construction and collection structure characteristics of three different types of university libraries: key universities, general universities, and vocational colleges. It is proposed that the construction and management of information resources should focus on solving the relationship between digital resources and traditional documents, the construction of theoretical systems, the sharing of characteristic resources and foreign language resources, and the cooperation and co-construction of regional information resources.

**Keywords:** University libraries · Information management · Resource construction · Comparative study

## 1 Construction

Modern information technology has promoted the diversified development of information resource carriers. Information resource construction is the organic collection, development, organization and utilization of information on different carriers in a disordered state. From a macro perspective, it is the overall planning and rational distribution of library information resources, and through the construction of the coordinated management mechanism for information resources, information resource system with overall cooperation, sharing and sustainable development are formed. Microscopically, according to the collection construction tasks and development goals, the information resource system of the library is constructed according to the proportion, level and focus. The development of information society has promoted substantial changes in the construction of library collection resources. Digital resources and traditional literature resources are highly integrated, which constitute the content of information resource construction together.

## 2 Information Resource Construction

The author carried out a questionnaire survey on the information resources construction of university libraries. The scope of the survey involved three major types of libraries in seven major regions in China, and university libraries account for 80.4%. The number of valid samples returned is shown in Fig. 1.

### 2.1 Information Resource Purchase Fee

#### 2.1.1 Annual Funding

The data analysis of the funding problem in this paper adopts two methods: one is the questionnaire survey, and the other is the factual database data of the university libraries of the Ministry of Education (taking 36 university libraries in Hubei Province as an example). According to the survey data, 23.5% of the three major types of libraries have an average annual expenditure of more than 10 million; 22.6% for 5–10 million; 15.7% for 3–5 million; 23.5% for 1–3 million; and 14.4% for libraries < 1 million.

From the data analysis, The funds of key university libraries are much higher than those of general universities and vocational colleges. The proportion of university library literature purchase fee is implemented according to the reference ratio of 5% as stipulated in the “Regulations for General Higher Education Libraries” promulgated by the Ministry of Education. Libraries of vocational colleges account for a relatively high proportion of the average annual funding, but because of the low annual funding base, the procurement costs for literature are mostly below 2 million, while those in general college libraries mostly fluctuate between 3 million and 8 million (Table 1).

The purchasing cost of literature resources in different types of university libraries account for more than 80% of the total funds (see Table 2).



Fig. 1. Hall nature (n = 51)

Table 1. Annual Funding of University Libraries Fact Database

Annual Funding	University A	University B	University C	Proportion
>2000	2/5.5%	—	—	5.5%
1000–1500	2/5.5%	—	—	5.5%
500–1000	3/8.3%	4/11.1%	—	19.4%
300–500	—	6/16.7%	1/2.8%	19.5%
100–300	—	9/25%	2/5.5%	30.5%

**Table 2.** The proportion of literature resource purchase expense to total expenditure

Proportional distribution	University A	University B	University C	Percentage
>30%~	–	3	2	13.9
50%~	–	–	–	–
60%~	–	2	1	8.3
70%~	1	3	–	11.1
80%~	1	4	2	19.4
90%~	5	10	2	47.2

Quantity unit: piece.

### 2.1.2 Information Resources Acquisition Fee

Data analysis shows that the proportion of traditional literature and electronic resources purchase fees in domestic university libraries is relatively stable, paper documents are stable with some declines, and electronic resources are stable and rising. The average purchase cost of traditional document and electronic document resources in key university libraries remains at 50%–65%. Judging from the distribution of the procurement cost of literature and information resources in 36 universities in the province, except for 7 key universities, 14 of the 21 general university libraries accounted for 50% of the total cost of literature resources.

## 2.2 Information Resource Construction

### 2.2.1 Traditional Literature

In order to meet the requirements of the Ministry of Education's evaluation indicators, the annual volume of books in some university libraries has increased exponentially. This leads to the imbalance of the disciplinary structure of the collection documents, such as the proportion of humanities and social sciences and science and engineering documents, the proportion of key disciplines and general disciplines, the proportion of professional documents and popular reading materials. In particular, foreign language literature has always been a weak link in resource management and utilization of library collections. Due to the high cost and there's no separate measurement indicator for foreign language literature, most of the libraries have reduced the ordering of foreign language paper books and periodicals, and the proportion of their purchases has decreased year by year.

### 2.2.2 Digital Resources

University libraries satisfy users' information demands by adding electronic resources. However, in the process of integrating and utilizing digital resources, each library overemphasizes the introduction of electronic resources and neglects user's usage, as the result, the purchase of electronic resources has increased year by year, but the utilization rate of users has not improved significantly. Analysis the reasons, First, users lack the

necessary understanding of library electronic resources; second, the features and functions of the database are not understood by users, resulting in few people asking about some excellent database resources; third, the unified retrieval system is immature. If users want to obtain documents with the same subject content included in different databases, they must search multiple single databases separately, which is time-consuming and labor-intensive; fourth, there is a lack of scientific evaluation of the utilization of digital resources in library collections, repeating the old path of “big and comprehensive” traditional documents.

### 2.2.3 Featured Resources

The construction of characteristic collection resources plays a very important role in enhancing the core competitiveness of libraries. We listed 7 optional items to investigate “the outstanding characteristics of libraries”. The results show that the outstanding characteristic of 60.8% of the libraries are the construction of information resources.

In accordance with the requirements of the “Regulations” for library collection resources, each library has successively built resource libraries with the characteristics of their own schools and regions. The construction of characteristic resources of university libraries is mostly the school’s academic achievements, dissertations and multimedia resources, network resources and school history materials, and some local college libraries have established resource banks closely related to regional economic construction. For example, Jiangnan University’s “Automobile Resource Database” is based on the automobile industry cluster and has won a good social repercussion.

Judging from the ranking of self-built libraries of college libraries in the province, It has successively built characteristic resource banks such as national, provincial and municipal key disciplines, school history or local history, key industrial economy or regional cultural resources, etc., which have high academic and cultural value and have a great significance to academic inheritance and the protection of regional cultural heritage.

The update time and scope of the collection resources of key universities are clear, the circulation and utilization rate of documents are high, the types of collection resources are complete, and they have strong resource integration, management and utilization capabilities, and provide unified retrieval, resource sharing and document delivery services. General university libraries pay attention to the construction of information resources such as subject foundation, applied education, and self-study education, and attach importance to the complementary construction of characteristic resources, electronic resources and traditional resources. The collection and utilization rate of foreign literature are low. More than 90% of vocational college libraries mainly focus on basic textbooks, reference books and books and periodicals for improving students’ self-cultivation. In principle, foreign books and periodicals are not purchased, and electronic resources and characteristic resource libraries are lacking.

## 3 Collection Structure

According to the comprehensive strength, each library has different tendencies for structural adjustment such as the construction of discipline resources and the distribution of

information resource carriers. The quantitative structure model of the collection system formed by documents of different disciplines, different levels, and different publication times is an important indicator for evaluating whether the collection resources are scientific and reasonable, a reasonable collection structure should be the combination of general documents and special documents, the organic coordination of various carrier documents, and the seamless link between digital resources and traditional documents. The library collection structure is composed of subject structure, hierarchical structure, time structure and language structure.

### **3.1 Key University Libraries**

Subject literature is complete in variety and content, which is professional, systematic, academic, and has high research value. Complete collections, covering all documents and special collections in any form in the subject area; research-level collections to meet the needs of independent research and postgraduate training. The collection resources are updated quickly, the languages are complete, and the utilization rate is high.

### **3.2 General Universities Libraries**

Subject literature is based on basic and applied education; collections reflect local characteristic. Research-level collections meet the needs of independent research; university-level collections meet the needs of college students' self-study courses. The update of collection resources is slow; the foreign language resources are insufficient, and the utilization rate is low.

### **3.3 Vocational Colleges Libraries**

The collection is featured, but the structure is single and the research is low; the electronic resources are insufficient. Basic-level collections, with complete representative literature in related professional fields, mainly books and periodicals that improve college students' self-cultivation and professional vision. Long update cycle and low utilization rate; lack of foreign languages resources.

## **4 Problems Need to be Solved**

As we can be seen from the above comparative analysis, it can be seen that libraries of different natures have their own emphasis and characteristics in information management and utilization, but at the same time there are common problems that need to be solved urgently.

### **4.1 The Relationship Between Digital Resources and Paper Documents**

Paper document is an important part of cultural education and cannot be completely replaced by digital resources. The construction of information resources should reflect their mutual complementation and perfection. Introduce electronic resources based on

evaluation indicators such as subject characteristics, user satisfaction and utilization, and “measured by the breadth and depth of covered subjects” [3] to avoid the decline of users’ ability to acquire effective knowledge due to excessive construction of digital resources.

The primary problem that needs to be solved urgently in the construction of information resources is to establish the analysis and evaluation indicators of information resources oriented by the needs of readers, and to scientifically evaluate the utilization of information resources in the library. Such as readers’ reading tendency and reading volume of traditional documents, statistics and analysis of digital resource browsing and downloading data, etc., to understand the collection status of paper documents and digital resources, and to establish coordinate the development of the library’s key safeguards for the construction of documents and electronic resources [1].

## **4.2 The Construction of the Theoretical System of Digital Resources**

The core competence contained in the library is the knowledge and application value embodied by the information resources. In contrast, the advantages of knowledge acquisition and utilization of digital resources are prominent, more and more users obtain knowledge information through digital resources. When users encounter problems that need to be solved, they are more willing to seek answers through search engines rather than libraries.

The Ministry of Education has clear index requirements for the basic collection of paper documents in university libraries. Traditional document construction is supported by a complete theoretical system, and rich experience has been accumulated in the long-term practice process. However, the evaluation indicators for the construction of electronic resources are not perfect. The construction of digital resources needs to be guided by a sound theoretical system, such as the development trend and structural system construction of digital resources, the calculation and evaluation of impact factors, and the research on the construction standards and norms of characteristic resource libraries.

## **4.3 Construction and Sharing of Characteristic Resources**

The construction of characteristic resources of University Libraries are in a leading position in the industry, however, there is no unified plan, standard and evaluation index for the construction of characteristic resources. Its construction scale, construction content and subject distribution are uneven. The characteristic resources are limited to the IP scope to provide full-text utilization, and the application scope is narrow [5].

The bottleneck problem in the construction of foreign language resources has not been effectively solved, and the contradiction between the collection and the needs of users is emerging, especially the libraries of general universities and vocational colleges are particularly lacking. Therefore, the construction mode of characteristic resources and foreign language resources of university libraries needs to be improved urgently: (1) Libraries need to establish unified standards, make an overall planning and coordinate sharing and member libraries cooperate in the construction of core collections and special literature libraries to achieve co-construction and sharing of characteristic resources [4]; (2) The construction of a foreign language full-text resource guarantee system, make

up for the shortage of foreign language collection and utilization by joint construction, centralized cataloging, document delivery, borrowing and returning within the system, etc.

## 5 Conclusions

At present, the network consortium of regional university libraries has formed a certain scale, but there are still some problems in resource sharing and utilization, such as: repetitive construction and standardization construction problems, differences in information resources and human resources among libraries, cost allocation and benefit allocation of resource sharing, etc. The establishment of the University Library Alliance has realized the overall guarantee of China's higher education document information resources. The library alliance should fully consider the differences in the quantity, quality and funding of resources occupied by university libraries of different natures, through vertical development, strengthen the construction of the document guarantee system of various types of university libraries in the province; through horizontal expansion, realize the co-construction and sharing of cross-regional resources, form a regional or cross-regional, professional or cross-professional multi-level cooperative management and operation mode, promote the complementary coexistence of traditional libraries and digital libraries, the infiltration and integration of information resource construction and user utilization, and the collaboration and development of libraries [2]. In the future, the construction of library information resources and information management will be a three-in-one construction pattern of paper collections, digital collections and virtual collections.

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