Design of Intelligent Evaluation System for Application Effect of Internet Financial Sharing Course

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Abstract. The traditional Internet course application effect evaluation system has the problem of slow convergence speed when scheduling network resources, resulting in small load energy on each node. In response to this problem, this research designed a new intelligent evaluation system for the application effect of Internet financial sharing courses. Focus on the design of the collector, memory and transmitter of the hardware part of the system, and ensure the efficient operation of the system through VPG configuration and 6 bus connections; then design the system software flow, which is divided into unified standards, information transmission, information storage, path selection, and documentation Six steps of conversion, resource sharing, and information evaluation. The experimental results show that the intelligent evaluation system designed in this study can effectively improve the convergence speed and increase the load energy on each node, making the resource nodes more balanced, and fundamentally improving the evaluation performance.

Keywords: Financial sharing course · Application effect evaluation · Resource node · Information evaluation

1 Introduction

With the rapid development of Internet technology, the proportion of paper resources in people's lives has become smaller and smaller, while the proportion of Internet resources has become larger and larger. Universities all over the country are reducing subscriptions to paper resources. Internet courses Resources are more supported and loved by people [1].

While sharing courses bring great convenience to learners, it also brings some problems. The first is the security issue. Resource sharing allows a large amount of data to be stored in the cloud, and users can access it without administrative rights, making it easier for hackers to attack. The second is the issue of resource usage. Many saved resources have a high repetition rate. Resources are wasted, and resource managers rarely buy and introduce new resources. The original resources are difficult to be fully utilized, and operating costs continue to increase. Finally, there is the issue of charging.

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Resource management requires a lot of operating costs. How to charge it has always been a problem [2, 3].

At the same time, in order to improve the application effect of Internet sharing courses, the construction of an effective intelligent evaluation system for the application effect of Internet sharing courses and improving the efficiency of information transmission is a hot topic in related fields. For the Internet Financial Sharing course, the current course application effect intelligent evaluation system is still in the past management mode, lack of pertinence, and management technology has not made great progress. The development trend of big data era makes information communication more and more digital. Therefore, this paper designs a new intelligent evaluation system for the application effect of Internet Financial Sharing course. Design ideas of the system are as follows: first of all, through the design of the collector, storage and transmission to build the system hardware environment, and through the VPG configuration and 6 bus connection to ensure the system run efficiently, and then in accordance with the unified standards, information transmission, information storage, path selection, document conversion, resource sharing, information evaluation six steps, and complete the system design of the software process.

2 System Hardware Design

Establish an intelligent evaluation system for the application effect of Internet financial sharing courses, guide the allocation and application of course resources according to the evaluation results, and realize the allocation of resources according to user needs, so that users can obtain the best means of obtaining the most abundant resources when allowed. The currently designed evaluation system has poor unification capabilities, and it is difficult to achieve resource sharing in a true sense, and the level still remains at paid sharing. Therefore, this article optimizes the hardware part of the shared system in view of the above problems.

The hardware structure of the intelligent evaluation system for the application effect of Internet financial sharing courses is shown in Fig. 1.

The system hardware shown in Fig. 1 applies cloud resource technology to enable shared course resources to be shared. A large number of embedded products are added to the system hardware to support various cloud classroom systems, improve the quality of financial courses, and ensure learning efficiency. At the same time, the use of embedded design in the evaluation process can improve the integration of information and make the evaluation process easier to operate.

On this basis, design collectors, memories and transmitters, and realize the storage, analysis and transmission of information on the basis of collecting information on the application effects of Internet financial sharing courses, thereby improving the effectiveness of the evaluation results.

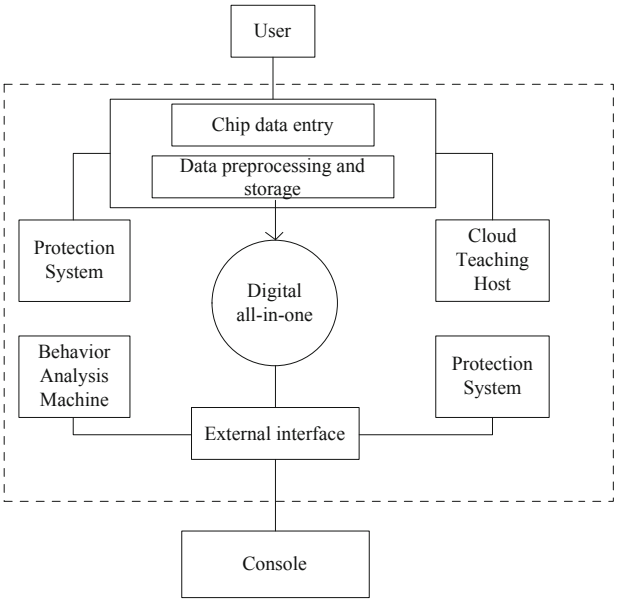

Fig. 1. System hardware structure diagram

2.1 Collector Design

The digital literature resource collector designed in this paper can achieve high-quality positioning acquisition, and compress the collected audio and video to achieve the low-power requirements of the system. The internal chip of the collector is Cawdsz6852, which is introduced by TI company and has the characteristics of multi-functional multimedia application [4, 5]. The collector is automatically connected with the wireless network, and the signal code is synthesized and transmitted to the wireless network data terminal, which is stored in the terminal and uniformly recorded in the hard disk. The collector structure is shown in Fig. 2.

When collecting video signals, the collector in Fig. 2 selects SCLK as the clock to record all signals. The VPO configuration mode of the collector is rawd mode, and the input video is one channel video. The collected nbsl signal is converted into PAL Color difference signal and output in the form of uraw-312.52.

When collecting audio signals, use BCLK as the clock to support synchronous input and synchronous output of each frame rate. The encoding device supports microphone and stereo input and output. The collected signal is an 8K signal with 19-bit quantization. The data exchange mode is DSP mode [6, 7]. The result frame of the signal acquisition process of the collector is shown in Fig. 3.

The signal collector in Fig. 3 is connected with PCI and HPI, the bus interface is Ethernet interface, and the data path is connected with B3 and B19 through PCI bus. The transceiver can receive and receive 10 m~100 m physical layer data. In order to realize simultaneous transmission of three kinds of data networks, ap685 is connected

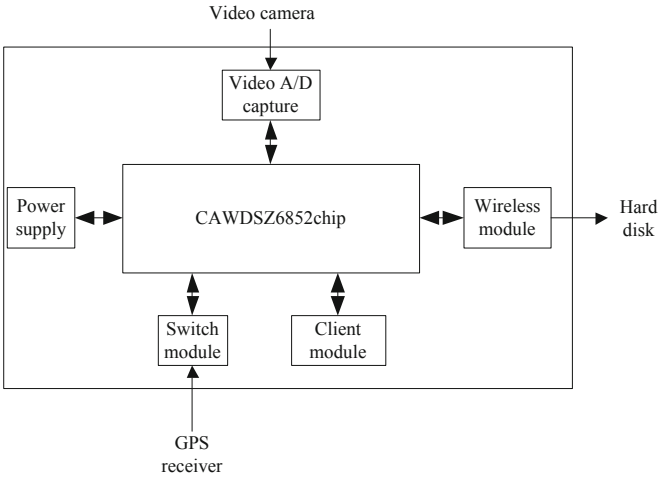

Fig. 2. Structure diagram of collector

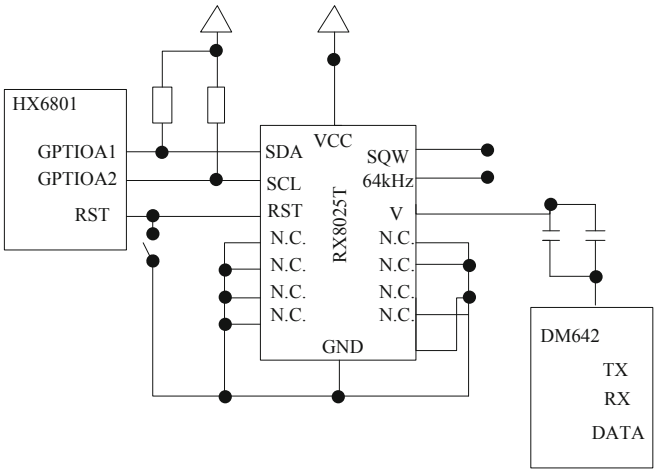

Fig. 3. Block diagram of the signal acquisition process

inside the system. The upstream rate and downlink rate of the collector are 3.5 mbit/s and 6.7 mbit/s respectively.

2.2 Memory Design

In order to improve the storage efficiency of the memory and increase the amount of information that can be analyzed by the evaluation system, this article selects a flash memory with a large storage range and low manufacturing cost, which is widely used in the transmission and communication of library digital literature resources, Adding

a single-chip microcomputer in the memory greatly increases the storage capacity and continuously reduces the area occupied. The memory structure is shown in Fig. 4.

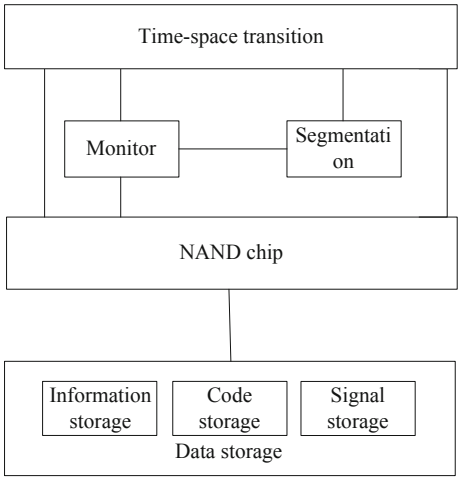

Fig. 4. Memory structure

There are six buses outside the memory, each bus is connected with an FPGA interface, and different interfaces are connected with different signals [8, 9]. The main design is as follows:

(a) Bus 1 connects signals in I/O mode with 52 bit width. It can input and output in two-way mode to realize bidirectional exchange of data. The mode of remark is I/O.
(b) Bus 2 connects the signal in out mode with 84 bit width, and outputs the signal in one way to control the signal entering.
(c) Bus 3 connects signals in BSC mode with 16 bit width and outputs chip selection signal in one way.
(d) Bus 4 connects signals in clas mode with link bit width of 6. It can input signals in one-way way to realize the board selection of signals. Different types of signal input modes are different.
(e) Bus 5 connects signals in bus mode with 81 bit width and busy signal input mode.
(f) Bus 6 connects signals in add mode, with link bit width of 27, and outputs address signal in one-way mode [10, 11].

The working intensity of the memory is very high, up to 10 h a day. Each memory must correspond to a microprocessor, connect FPGA and abus at the same time, complete the data exchange at the upper computer, so that the human-computer interaction can be completed smoothly. The memory circuit diagram is shown in Fig. 5.

The memory circuit diagram in Fig. 5 controls the work of different resistors through flash chip and SRAM chip. The CPU dominates the whole system and tests the read-write of the memory chip. When communicating with the upper computer and the lower

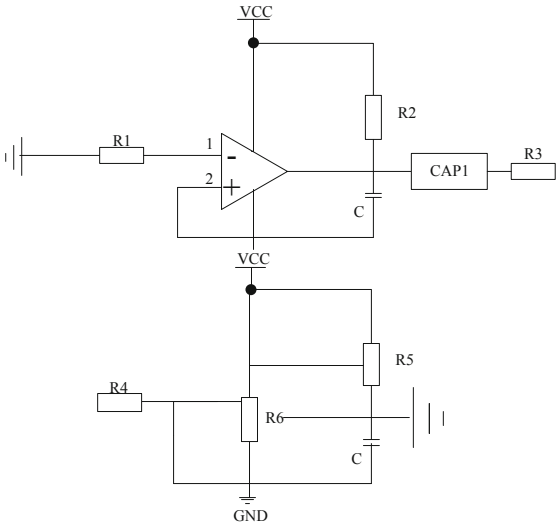

Fig. 5. Schematic diagram of memory circuit structure

computer, the system software should be automatically debugged to read the program loaded by flash, so as to provide a better running environment for the CPU [12].

2.3 Transmitter Design

The transmitter is responsible for transmitting the information from the collector and memory to the central evaluation program. The transport chip used in this paper is maux8996 chip, which can correspond with external bus interface and other module interfaces and connect with specific timing logic.

There are 160 pins in the transmitter, each pin is connected with different expansion interface and interface bus. The structure of the transmitter is shown in Fig. 6.

In Fig. 6, the memory can transmit audio data and video data of Internet Financial Sharing course to more than 300 m. It can support the transmission of VGA, SVGA, XGA, SXGA, WXGA and other signals. The maximum resolution can reach 1823 × 1532p/80/120 Hz, with ultra high definition resolution. It does not need to install drivers or reset the network when installing. It is very simple and convenient. The most important point is that the designed transmitter can support synchronous transmission and analysis of video and audio, effectively avoiding the phenomenon of delay and asynchronous. The transmitter circuit diagram is shown in Fig. 7.

CAT5e / 6 network cable is selected by the transmitter, and VGA signal can be used in the transmission process. Different processing methods are adopted for the transmission signal of different paths. The over-voltage circuit protection is selected at the power supply, and the flow protection mode of the transmission port is level 3 protection mode, which provides a good guarantee for the safe operation of the system. Compared with the traditional transmitter, the transmitter designed in this paper not only has a strong

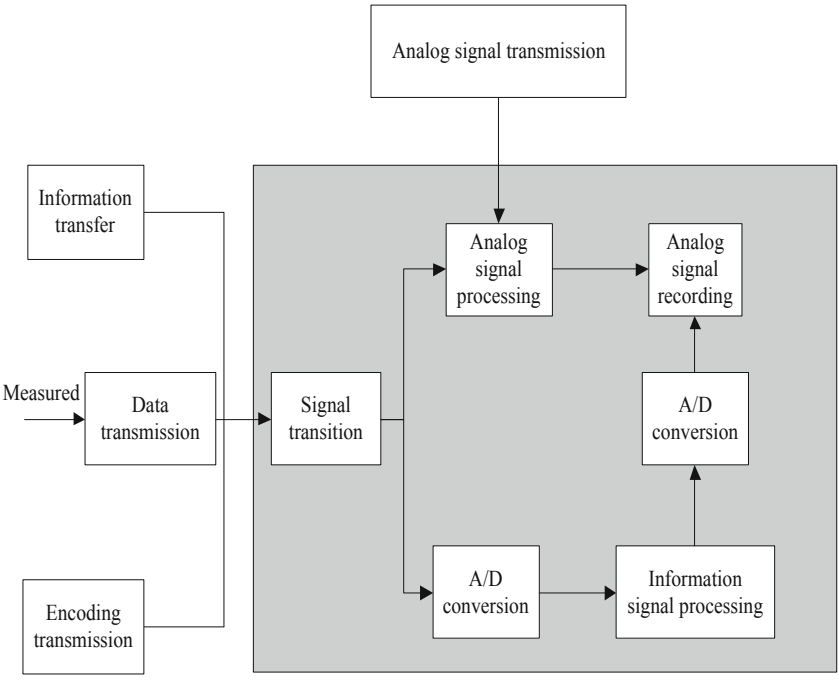

Fig. 6. Schematic diagram of the transmitter structure

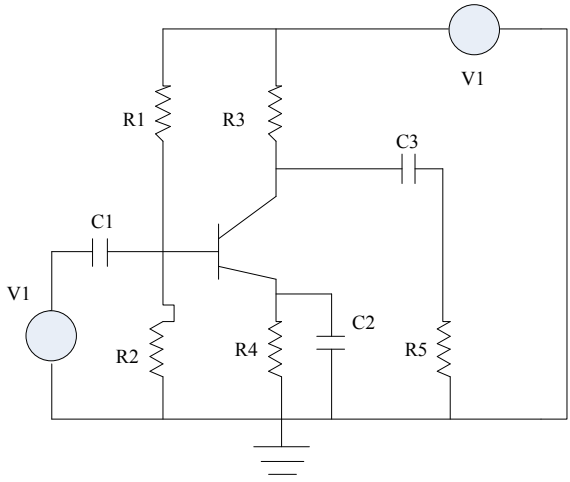

Fig. 7. Transmitter circuit structure diagram

driving ability, but also has excellent lightning protection characteristics, which makes the system more stable and cost-effective.

3 System Software Flow Design

Based on the design of the collector, memory and transmitter and the construction of the system hardware environment, the software flow of the intelligent evaluation system for the application effect of Internet Financial Sharing course is designed. Figure 8 is the flow chart of system software.

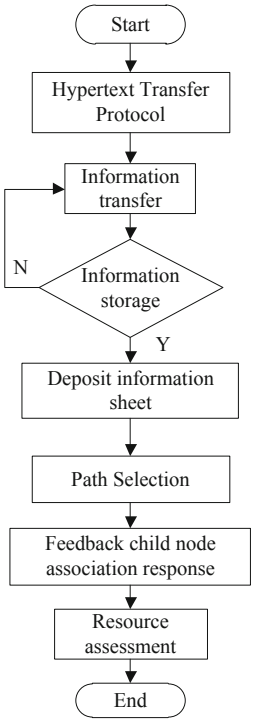

Fig. 8. System software flow diagram

The main working steps of the software flow chart shown in Fig. 8 are 6 steps. Since resource sharing can only be realized in a unified platform, it is necessary to make clear the transmission of information. There are four forms of transmission information. Online cataloging has its own coding rules. Each user can encode the new books and upload the encoded data to ensure that the information resources used are more standardized. The consulting services provided by virtual reference services are not subject to any time and space To solve the problem for users through page push, web browsing and other ways; then transfer the obtained information through the transmitter, and transmit the above Internet Financial Sharing course application information to the central evaluation module; the central evaluation module stores and processes the uploaded signals, and selects different paths to send them to the users; and then converts the documents again to make the data correct Finally, the evaluation of course application information is completed.

The software network model designed in this paper is divided into input layer, hidden layer and output layer. When evaluating, we should focus on how to reduce the complexity of data. The theoretical basis of the model design is: find the sample probability of the random variable distribution in the space, use experimental simulation to calculate the probability of an event in the sample, find the attribute average, analyze the probability of change, and determine the cost of the evaluation process. So as to find out the best evaluation plan. The software model of the intelligent evaluation system for the application effect of Internet financial sharing courses is shown in Fig. 9.

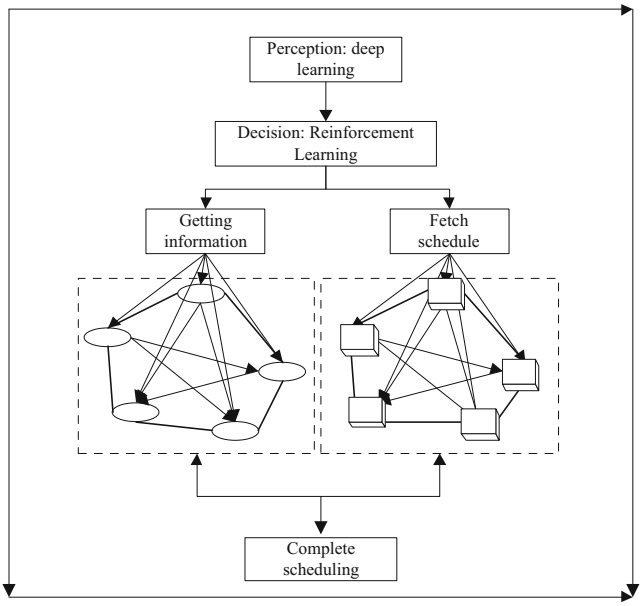

Fig. 9. Software model of intelligent evaluation system for application effect of Internet Financial Sharing course

The intelligent evaluation system for the application effect of Internet financial sharing courses assigns multiple weights to the samples, uses non-uniform discrete methods to resample the samples, and re-schedule them uniformly. This can be regarded as a discrete uniform distribution, and the weight samples can also be reduced. The sampling process is shown in formula (1):

$$E_{pv}(f(x)) = \int_a^b f(x)p(x)dx \tag{1}$$

In formula (1), $E_{pv}(f(x))$ is the density value obtained by random sampling verification, x is the sample value, a is the weight of the total data, and b is the weight of the sample. After sampling, weighting is performed to estimate the state value. Sampling results are displayed as values and processed recursively. Recursive processing such as formula (2):

$$V_k = \frac{f(x_1) + f(x_2) + \ldots\ldots + f(x_n)}{n} \tag{2}$$

In formula (2), V_k is the recursive value of the sample, $f(x_1)$, $f(x_2)$ and $f(x_n)$ are the weighted values corresponding to the network shared resources, and n is the number of network shared resources. The sample equations are recorded as $P(v_k|v_{k-1})$ and $P(v_0|v_k)$, and the probability density is verified by Monte Carlo method. In the verification, it is assumed that the state of the system is always distributed, and the predicted values are independent of each other without interference. The expression of probability density function of system samples is as follows:

$$P(v_k|v_{k-1}) = K_I \int_0^t e(t)dt \tag{3}$$

In formula (3), K_I represents the nonlinear system parameter, $e(t)$ is the importance function, and t is the recording time. The above formula is ideal for non-linear systems, but it is very difficult to estimate for linear systems. The system state is not stable enough and it is very difficult to schedule. Therefore, correction processing is required. The network shared resource data scheduling obtained after linear system correction The function density is:

$$P(V_{0K}|V_k) = K_D \frac{de(t)}{dt} \tag{4}$$

In formula (4), K_D is the parameter of linear system. In order to normalize the above functions, change the weight value, and conduct random sampling, so that each value presents a recursive state and tends to the same sample for evaluation. The assessment process is as follows:

$$k_x v + k_y v = \sqrt{(x, y)[I_x, I_y][u, v]} \tag{5}$$

In formula (5), $k_x v + k_y v$ is the evaluation result, v is the evaluation speed, u is the scheduling distance, and I_x, I_y is the increased horizontal and vertical resources. According to the above calculation process, the intelligent evaluation of the application effect of the Internet financial sharing course is completed.

4 Experimental Study

In order to test the application effect of the intelligent evaluation system for the application effect of Internet financial sharing courses designed in this paper, the traditional evaluation system is selected to carry out comparative experiments with this system, and the evaluation speed of different systems and the energy load of each node are recorded.

4.1 Experimental Parameter Design

Design experimental parameter nodes on the Internet platform, and the node allocation of each network resource is shown in Table 1.

Table 1. Network shared resource node allocation list

Number	Communication capability	Sharing capabilities
1	0.25	230
2	0.26	196
3	0.25	235
4	0.32	245
5	0.28	210

4.2 Experimental Results and Analysis

(1) Comparison of convergence rates.

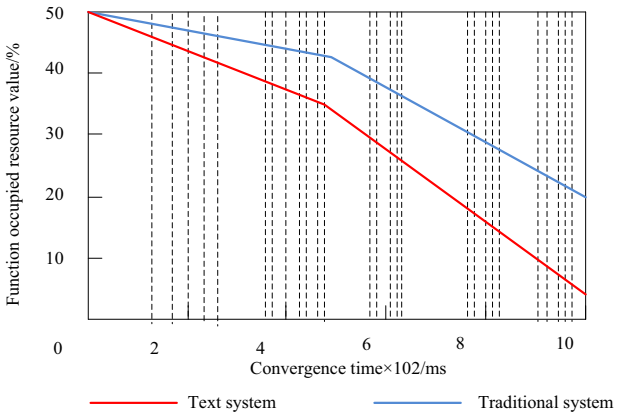

Fig. 10. Experimental results of convergence rate comparison

In order to improve the verification effect, the DVFS strategy and MVDS measurement are unified and simulated. Observing Fig. 10, it can be seen that compared to the traditional system, the system of this paper has great advantages. When the convergence time reaches 300ms, the evaluation system of this paper can find the optimal scheduling plan, while the traditional evaluation system can only find the optimal scheduling plan when the convergence time is 700 ms. Find the best evaluation method. It can be seen

that the evaluation system in this paper has the advantages of fast working speed, high accuracy and strong predictive ability.

(2) Analysis of network node load energy.

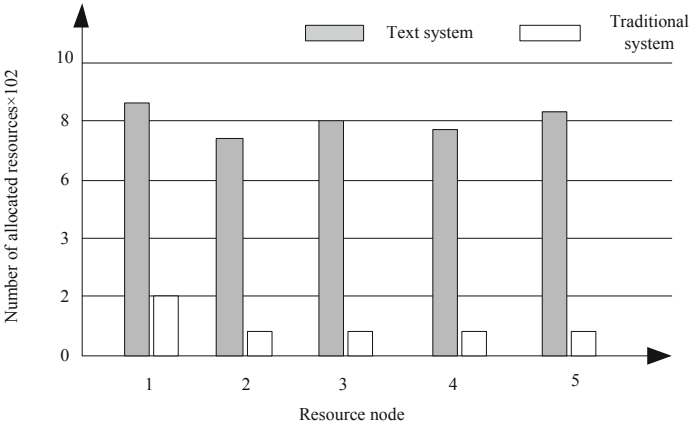

Fig. 11. Comparison results of network node load energy

As can be seen from Fig. 11, the computing power ranking of network nodes is node 1 > node 5 > node 3 > node 4 > node 2. When the resource scheduling is reasonable, each node completes the scheduling according to its own computing power. The traditional system can only allocate less data resources, which leads to the imbalance of resource nodes. This system can allocate the network node resources well and improve the balance of resource nodes.

Based on the above experimental results, the following experimental conclusions are drawn: the traditional intelligent evaluation system has a non-uniform layout of hardware facilities, lack of connections between various hardware, independent work, and poor overall planning. When the literature is introduced, a unified investigation cannot be made, a large amount of human and material resources are wasted, and it is difficult to guarantee sustainable development for shared development. At the same time, the sharing system and the retrieval system are not related, and it is difficult for the central evaluation module to control the evaluation service process. In addition, traditional systems have a variety of ways to evaluate resources. Metadata, carrier format, and storage formats can record resources. It is difficult to share documents, and there are no corresponding protection measures in the system, and the education resource evaluation process is lacking. protection mechanism.

And this system can layout from a macro point of view, establish database collaborative development, and achieve a compatible, complementary collaborative relationship.

Through the virtual management center unified revision management literature organization, the integration of information, all the literature resources planning into a unified format, so as to better complete the application performance evaluation.

5 Conclusion

The Internet provides a good platform for the sharing of information resources. Every resource user can use the Internet resources on an equal and voluntary basis. At the same time, different institutions can cooperate with each other to expand the resource reserve through different technical means. At present, there are many ways to share the resources of Financial Sharing courses in Colleges and universities, including online cataloging, document delivery, Cooperative procurement and virtual reference. Various forms of data dissemination make the management of shared resources more complex. Therefore, this paper designs the application effect intelligent evaluation system of Internet Financial Sharing course, which provides strong support for the further development of Internet Financial Sharing course in the future.

Although the system in this paper has achieved a certain degree of application effect, it still has room for improvement due to the limitation of research time. In the future research, the system will be further optimized from the aspects of improving the evaluation efficiency.

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