Research Article

Design and Implementation of Vocational Education Management System Based on Discrete Fourier Transform

Zhiqiang Han [iD]

Jiuzhou Polytechnic, Xuzhou 221116, Jiangsu, China

Correspondence should be addressed to Zhiqiang Han; 00848@jzp.edu.cn

In some remote areas and even some vocational colleges, the information management of students is still stagnant on paper. Such traditional methods have obviously lagged behind the development and needs of society. The traditional manual management is a waste of both manpower and material resources. In today's rapidly developing information age, it is very necessary to study an efficient vocational education management system. The vocational education management system designed in this paper includes Web server, DB server, college management terminal, and load balancing switch. In this system, CONN.ASP is a common module of all ASP programs in the whole system. It is mainly used to realize the connection between ASP program and database and the calling of common function submodules. In order to reduce the power consumption of the vocational education management system, the Discrete Fourier Transform (DFT) theory is proposed in this paper. This algorithm can effectively save the size of the storage unit and the number and frequency of reading the twiddle factor, so as to achieve the purpose of improving the operation speed. This paper randomly selected the scores of 10 classes and use the system for data processing test. A total of 50% of teachers were particularly satisfied with the tables generated by the discrete Fourier transform-based vocational education management system. They believed that the vocational education management system based on discrete Fourier transform is very fast in data processing, and the processing speed was within 0.1 s. The system designed in this paper can meet various demands in vocational education management and continuously enhance the function of educational administration management.

1. Introduction

Education is an important way for a nation to thrive and an important basis for realizing the Chinese dream. With the continuous expansion and deepening of educational resources, vocational education, as a beneficial supplement to higher education, has received extensive attention. Vocational education is gradually accepted by students, parents, and employers because of its advantages of strong professionalism, strong pertinence, and wide application. The core management idea of the vocational education management system is to realize the effective management of vocational education, including the management of educational resources, information release, and information presentation and other functions. With the help of computer network technology and information technology, it is of great significance to develop vocational education management

system and improve management flexibility and management efficiency.

Vocational education schools urgently need a scientific management model and a modern management carrier, so the research and development of the vocational education management system is very necessary. Golsteyn and Stenberg studied individual enrollment data based on short-term (2-year) high school courses in Sweden, exploring for the first time an individual's earnings over an almost complete career [1]. Anderson presented the findings of a review of the policy and research literature, focusing on the following: the Australian vocational education and training (VET) market and the development of the policy framework and administrative infrastructure of the Australian training market since its inception [2]. Verhaest et al. found a similar contrast effect in terms of education and skills mismatch [3]. Oviawe et al. examined best practices in TVET school-

workplace collaboration: bridging the skills gap to meet workforce demands in the twenty-first century workplace [4]. Di Stasio and Valentina believed that because of the popularity of the VET system in different countries, the degree of participation of social partners in providing training and vocational skills certification are different [5]. The efficiency of the vocational education management system they proposed is very slow. Therefore, this paper will optimize the vocational education management system by means of discrete Fourier transform.

The discrete Fourier transform can improve the memory read efficiency. Okada and Umeno studied the problems in the discrete Fourier transform (DFT) test contained in SP 800-22 published by the National Institute of Standards and Technology (NIST) [6]. Abbas et al. has developed accurate algorithms in two and three dimensions that involve only one-dimensional equidistant fast Fourier transforms without interpolation or approximation at any stage [7]. Savchenko and Savchenko considered the problem of autoregressive modeling of speech signals from their discrete Fourier transform data over a speech frame (several milliseconds) interval [8]. Freitas and Morgado-Dias focused on the theoretical derivation of correlated multisampling techniques via discrete Fourier transforms, which explicitly include noise contamination processes during image sensor readout operations [9]. Chechetkin and Lobzin developed a discrete double Fourier transform (DDFT) algorithm [10]. The discrete Fourier transform they proposed is quite detrimental for sustainability in practical engineering.

In recent years, with the continuous expansion of the enrollment scale, coupled with the large mobility of teachers and the complex student structure, the management difficulty is increasing and the management efficiency is low. In order to improve management efficiency, it is urgent to standardize management with the help of modern means and scientific management methods. This paper designs and implements a management information system suitable for vocational education. The system is based on Browser/Server architecture and provides a unified platform for college information release. It provides system support for teachers and students management and provides a support platform for teachers and students to communicate after class. Using discrete Fourier transform we can mine user operation habits, preferred content, and access frequency information from user operation history, so as to guide system content organization and access management, and significantly improve system resource utilization. It can meet the needs of the largest users with the smallest content resources, thereby saving education and teaching resources. The proportion of external teachers accounted for 21%, and the teachers hired included both those who taught cultural courses and a small number of enterprise technical personnel.

2. Design and Realization of Vocational Education Management System

2.1. Vocational Education. In the era of knowledge economy, it is impossible to fully and effectively participate in the education competition only by the decision-making of one's own department leaders. Therefore, it is necessary to bring all relevant parties in the education process such as colleges, teachers, students, parents, and employers into a close relationship. According to the accumulated data, such as the source of students, enrollment grades, gender, age, academic performance, job destination and parental evaluation, data mining and extraction are carried out based on the method and process of knowledge discovery. In this way, representative decision support data can be formed and the necessary basis for policy designation can be provided.

Using discrete Fourier transform, the operating habits of operators can be captured, and data prefetching is performed for the current user in the background, thereby improving the efficiency of data access and user access. With the increasing employment pressure, vocational education is no longer limited to postvocational education. It contains the sum of preservice education and postservice education of various educational forms, which are a comprehensive education facing the market economy and global market, changing with the changes of social forces. It takes different forms in different parts of the world as the needs of the global market change. Universities and colleges around the world are gradually adapting to this change, striving to respond quickly to the current needs of different groups and their demands to continue their studies. With the increasing progress of science and technology, people are more and more aware of the great significance of vocational education.

When the sampling frequency is fixed, the accuracy of the DFT depends on the frequency variation of the management system. In DFT, the frequency resolution $\triangle$fDFT is a gate, which refers to the minimum distance that can be resolved in the spectrum. Its calculation formula is as follows [11]:

$$\Delta f_{\mathrm{DFT}} = \frac{f_s}{N}. \tag{1}$$

In formula (1), N is the number of student information sampling points [12].

In the management of higher vocational education, the primary problem of the local government as the main body of management is to clarify its own scope of authority. In the process of talent cultivation, society and the market are in a dominant position, while local governments and relevant departments of higher vocational education play a more role in serving and cooperating. With the continuous development of the economy and society and the intensification of competition, the local government has gradually transformed from an outsider to a coordinator. The formulation of relevant laws on vocational education by the state confirms the legal status of vocational education from the legal level, providing legal guarantee for the development of vocational education. The policies, regulations, and rules formulated by local governments according to national laws and the actual situation of local development provide a strong impetus for the construction of higher vocational education, making the construction of higher vocational education more targeted and in line with local development requirements. At the same time, the construction of the

management system of higher vocational education by the local government also ensures the standardization and sustainability of the development of higher vocational education.

2.2. User Requirements and Functions of Vocational Education Management System. Through the research of users, the user needs are formed. The user needs mainly include two aspects, namely external functions and internal functions. External functions are functions that users expect the system to provide to external users, and internal functions are functions that users need to provide for system maintenance.

(i) External function

    (1) Information release function: The information release function is to centrally manage some of the information on the web page that needs to be changed, including news, other articles, new policies, and real-time dynamics and other information that needs to be updated. The data are classified by some common problems, and finally systematized and standardized, and published on the college website.

    (2) In-site information retrieval function: The in-site information retrieval function runs through the entire website, which can facilitate users to find the information they are interested in more quickly. It will be convenient for information viewers of the website to operate according to their preferred search forms (such as column, title, content, classification, date), allowing users to find the resources they are interested in in the fastest way in the huge database. It is necessary to provide a convenient and efficient query function in the website. The query can be carried out according to categories, keywords, etc. The full-text content retrieval can also be carried out based on the full-text content. It supports complex combination retrieval methods for arbitrary keywords. It needs to support Chinese and English mixed retrieval methods and support intelligent fuzzy retrieval methods. Fuzzy search means that the system makes more searches based on the words entered by the user. In order to meet the needs of different information websites, the system developer provides a portal search based on web content and provides a way to classify and retrieve information in the site based on its own website content.

(ii) Internal functions

    (1) Confirmation function: The teaching situation, feedback, and spot checks of the college are monitored every month or within a fixed period of time, and is submitted to the management department for confirmation.

    (2) Alarming function: The administrator is alerted when facing one of the following situations. The grades (pass rate and excellent rate) of a certain course are not within the upper and lower limits set in advance for the course. In a certain course, the teacher is late, leaving early, or changing the class location, which is not in accordance with the school management regulations. A course is about to end or to enter the examination period, prompting teachers to enter grades within a specified time period, etc.

    (3) Intelligent function: It adopts the basic theory of knowledge discovery, monitors the data in the system, and submits it to the user for confirmation in time. For example, there are no students taking electives in a certain course for a long time. The test scores of a certain course have changed abnormally. The feedback information of college teachers and students is abnormal, etc.

The frequency resolution of the DFT method is often fixed and cannot be adjusted with the fundamental frequency. In addition, due to insufficient frequency resolution, when the signal contains interharmonics, the fence effect will also cause calculation errors. The fence effect is to sample a function, that is, to extract the corresponding function value on the sampling point. The calculation formula of the mean square error of the processing efficiency of the vocational education management system is as formula [13]:

$$\text{MSE} = \frac{1}{(M \times N)} \sum_{x=0}^{M-1} \sum_{y=0}^{N-1} (f(x, y))^2. \tag{2}$$

The calculation formula of energy consumption of vocational education management system is as formula [14]:

$$\text{SNR} = 101G \frac{\varepsilon}{\sqrt{\text{MSE}}}. \tag{3}$$

(iii) External structure

In the system analysis of this paper, the system functions and user structure are shown in Figure 1. The functions include information release function, information management function, in-site information retrieval function, user registration management function, information feedback function, online polling function, confirmation function, intelligent function, and backup function. Vocational education college management system is mainly for four types of users, namely students, teachers, administrators, students' parents, and other access users. These users can be divided into four categories according to their access content and characteristics, namely Guest, Teacher, Administrator, and Superuser.
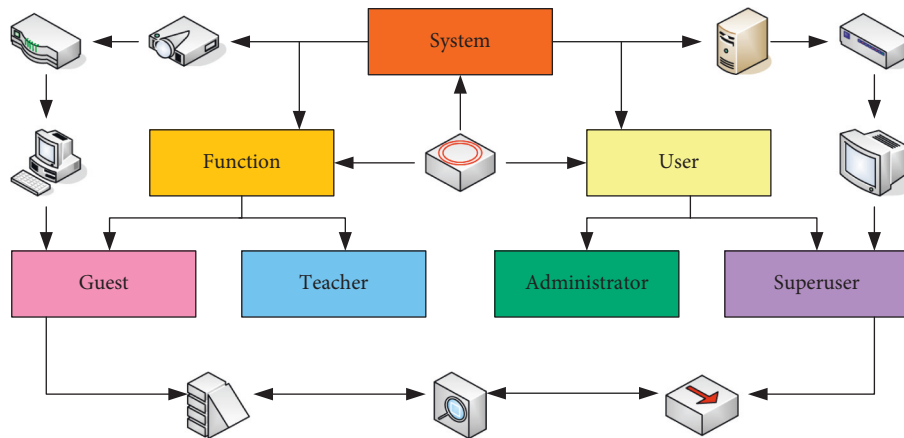
FIGURE 1: System function and user structure.

Guest users mainly include students, students' parents, and other personnel. Such users can only access the data disclosed by the system, but cannot access the background data of the system.

Teacher users are mainly colleges and teachers related to college courses. Such users can access both public data and data related to their own courses.

Administrator users are mainly college administrator users. Such users can see all the data in the system and can modify some authorized data.

Superuser users are mainly system maintainers and college administrators, and these users are given access and modification rights to all data.

2.3. System Implementation. The school campus network provides dedicated access routes for vocational and technical colleges and the vocational education management system includes Web servers, DB servers, college management terminals and load-balancing switches. The router not only provides docking services with schools but also provides docking services with government agencies, including users of state organs, city and county counterpart management departments, external networks and parents. It also provides access services for students. The intelligent function module mainly uses the knowledge discovery method to organize, extract, and configure the data information in the system, such as system data storage optimization, user system operation records, user operation data analysis statistics, and other knowledge discovery operations.

The functional structure of the course management subsystem is shown in Figure 2. It is divided into five parts: teacher information management, course management, course search, course application management, and safe withdrawal. Teacher information management includes basic information modification, password modification, user registration, and user login. Course management includes course creation, course modification, course deletion, course status setting, course information release, course browsing, and information printing. Course searches include quick search, advanced search, category search, course favorites,

and course browse. Course application management includes basic application information, applicant information, and application status.

The information list stores the published information, including the information number, name, release date, validity period, quantity, issuer, and access object. The list of assigned information describes the information assigned each time, including the information number, name, release date, effective date, and the object to be released. The course selection list describes the summary of course selection in the past semester, including the number of class hours per week, the number of weekly credit hours, the number of elective students, and coefficients. The student grade list describes the examinations of a course in the past semester, including course number, name, and number of people. The class schedule list includes class number, name, class date, number of teaching weeks, number of electives, class location, class time, and status flags. The data analysis checklist includes the content number, name, data results, and auxiliary suggestions.

After the administrator has successfully logged in, the administrator can enter three subsystems for the next step, namely the website content maintenance subsystem, the website data maintenance subsystem, and the user and authority management subsystem. After entering the website content maintenance subsystem, the legality and timeliness of the website information are checked, and the expired website content is deleted. After entering the website data maintenance subsystem, file data, course data, and user data are maintained in the background. After entering the user and authority management subsystem, operations such as adding, modifying, and deleting users are completed, and user authority is set for each user. After the operation is completed, the administrator can choose to return to the home page or exit the maintenance.

In the process of developing vocational education management information system, because each functional module is realized by a relatively independent ASP program. Each ASP program must connect to the database before accessing the database, and each functional module has many similar functions in the implementation process. For example, the same submodule function needs to be called when fetching data from the database and sending the data
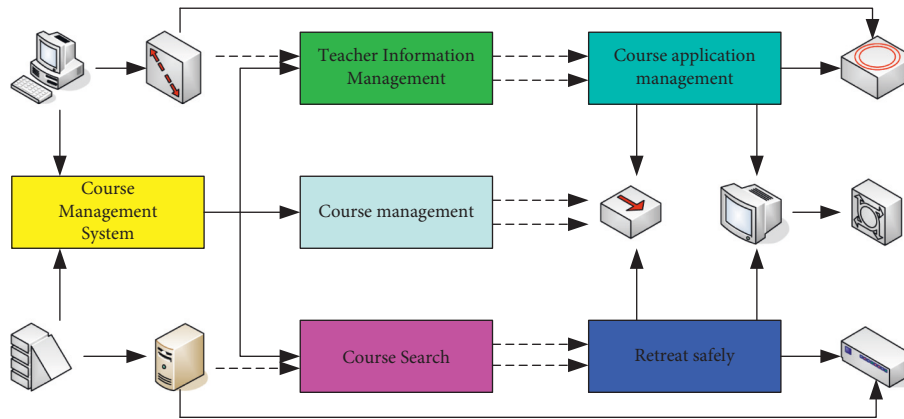
FIGURE 2: Functional structure of course management subsystem.

to the HTML page. This will lead to a large amount of program code repetition in places with similar functions, which wastes system resources, thereby reducing the development efficiency and maintainability of the system. Therefore, in the process of developing the vocational education management information system, this paper adopts the modular program development method. That is, the parts with similar functions are separately proposed and designed into common modules, such as database connection, and calling of the same function submodule. This greatly reduces the code amount of the program, thereby improving the development efficiency and maintainability of the entire system. In this system, CONN.ASP (the statement and configuration to connect to the database) is a common module of all ASP programs in the whole system. It is mainly used to realize the connection between ASP program and database and the calling of common function submodules.

2.4. System Development Environment and Testing

(1) Server side:

   Operating system: Microsoft Windows Server 2000/ 2003

   Web server: Microsoft IIS5.0 or higher

   Database system: SQLServer2000

(2) Client side:

   Operating system: various platforms.

   Browser: most commonly used browsers.

Each test phase is completed one by one according to the test phase schedule. In the functional testing phase, the testers randomly extract the user names and passwords of the administrator and client in the database. The system is tested for correctness and error one by one. The user login command is submitted to the system login platform. The user login interface should correctly display the feedback information of success or failure [15].

2.5. Discrete Fourier Transform. The discrete Fourier transform approximates the sampled signal by a finite set (the set equivalent to a line segment of a string of natural numbers, and the empty set) of exponential functions whose frequency, amplitude, and phase angle are unknown. First, two invariant central moment sets are defined, and their weighted averages are calculated, respectively, as feature quantities. The template is extracted from the original student data through the mapping function and added to the original vocational education system data after multiplying the scaling coefficient, so that the feature quantity reaches a certain predetermined value. Due to the geometric invariance feature of this feature quantity, it can resist common geometric attacks. DFT not only ensures the read-only memory (ROM) with less twiddle factor but also reduces the number of readings when extracting the information of the vocational education management system, realizing the unity of speed and reduction of system power consumption.

The Fourier transform of the two-dimensional discrete function $f(x, y)$ of the vocational education management system is as formula [16]:

$$f(u, v) = \frac{1}{MN} \sum_{x=0}^{M-1} \sum_{y=0}^{N-1} f(x, y) \exp[2\pi (ux/M) + (vy/N)]. \tag{4}$$

The spectrum and phase spectrum of the discrete two-dimensional Fourier transform of the vocational education management system are as follows [17]:

$$|f(u, v)| = R^2(u, v) + I^2(u, v), \tag{5}$$

$$\sigma(u, v) = \arctan\left[\frac{I(u, v)}{R(u, v)}\right]. \tag{6}$$

Due to the effect of spectrum leakage, the result obtained by DFT is often only an approximation of the real spectrum of the signal. The error comes from the spectral leakage caused by windowing and truncation and the numerical error of asynchronous sampling. This is because in reality, signal analysis must truncate a section of limited length. As long as there is truncation, it will inevitably bring about spectrum leakage. The ultimate purpose of windowing is amplitude modulation. Compared with some other window functions and rectangular windows, in the time domain, the

amplitude of the acquired educational information tends to zero at the beginning and end of sampling to make it smooth. In the frequency domain, these window functions have wider main lobes and lower side lobes, which means that the energy of the vocational education management system is more concentrated near the midline in the frequency domain. The energy loss of vocational education management system is suppressed [18].

3. System Experiment Results and Analysis

A total of 36% of full-time teachers have obtained national vocational qualification certificates, of which 24% are teachers above senior level. The situation of vocational school teachers obtaining national vocational qualification certificates is shown in Figure 3.

Vocational school teacher source structure statistics have different opinions on the standard of "double-qualified" teachers. This paper adopts the "three types of dual-qualified" teacher division method widely used in the academic circles. The dual-qualified teachers type refers to talents with high literacy and high level. The survey showed that "dual-qualified teacher type" accounted for 38% and 56% of full-time teachers and professional teachers, respectively, the proportion of which was relatively low. Among them, the proportion of the first type of "dual-qualified" teachers was relatively high, accounting for 25% and 392% of full-time teachers and professional teachers, respectively. The distribution of "dual-qualified" teachers was also unbalanced. Technical schools were much higher than schools sponsored by the education department. Urban schools were higher than county and city schools, and public schools were higher than private schools [19, 20]. The proportion of dual-qualified teachers is shown in Table 1.

Flexible and diverse introduction mechanisms enhance the vitality of the teaching staff. Vocational schools have many majors and are updated quickly. According to the needs of the post, the school selects teachers through a variety of methods. The first is to strengthen ties with colleges and universities and go directly to colleges to recruit outstanding graduates. The second is to strengthen school-enterprise cooperation. The preliminary establishment of the school-based training mechanism promotes the improvement of the level of teachers. Many schools have formulated long-term plans for school teacher training, clarified the tasks and goals of school teacher training, and implemented the famous teacher project. Most schools combine the implementation of the teacher appointment system and constantly improve the structural salary system to mobilize the enthusiasm of teachers. A solid funding guarantee mechanism has been established to train teachers in multiple ways. At present, the main forms of school-based training in schools are as follows: implementing the project of "teachers going to the factory" and sending professional teachers to the factory for training. The school adopts the forms of "one helps another" and "teacher and apprentice" to accelerate the growth of young teachers. Teachers can be promoted by race, that is, by organizing and participating in teaching and research activities such as municipal, provincial, and
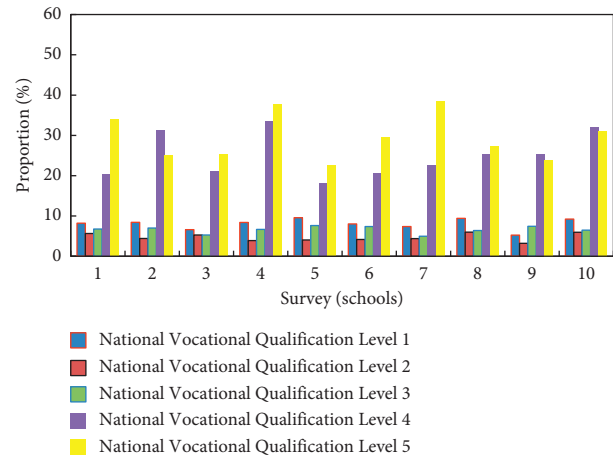

FIGURE 3: Vocational school teachers' acquisition of national vocational qualification certificates.

national professional skills competitions, teaching competitions, the overall level of the team can be improved. Faculty and staff are encouraged to achieve academic qualifications through self-study.

The teaching system is not perfect. The flow of teachers can only be carried out within a relatively regional range, and the space is very limited. Some schools still mainly supplement cultural teachers. The time for teachers to practice exercise cannot be guaranteed. On the one hand, teachers in vocational schools pay attention to the experience of professional practice and emphasize the close combination of verbal and hands-on ability. Opportunities for teacher training are uneven. Due to the differences in the majors offered by various schools, there are many major categories and higher training costs, resulting in many training opportunities for some majors, but basically no for a few majors.

Among them, the proportion of external teachers accounted for 21%. The hired teachers include both cultural and professional teachers, as well as a small number of enterprise technical personnel (The proportion of external teachers is shown in Figure 4(a)). At present, the proportion of teachers in cultural courses in secondary and higher vocational colleges is relatively high, accounting for 42% of the total number of full-time teachers, and the proportion of practical instructors is only 13% (The proportion of teachers by type is shown in Figure 4(b)). Higher vocational education should be highly valued and supported by the government and society. The vocational education management system based on discrete Fourier transform is more conducive to realize the scientific management of investment, which can give full play to the actual benefits and efficiency of diversified investment, promoting the active and steady development of higher vocational education to better serve the needs of social and economic development. Diversified management investment is an opportunity for enterprise groups to increase income, which reflects a trend of modern school management and development.

The system provides a user management module, which implements functions such as user information

TABLE 1: Proportion of dual-qualified teachers.

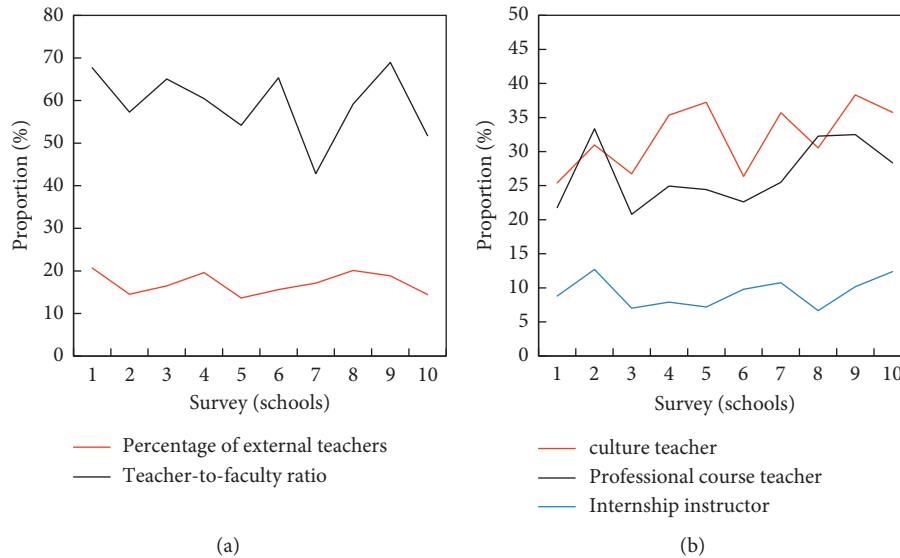| Dual-qualified teacher type	Proportion of dual-qualified teachers (%)	Proportion of full-time teachers (%)	Proportion of teachers in professional courses (%)
Class I dual-qualified teachers	65	25	32
Class II dual-qualified teachers	25	6	12
Class III dual-qualified teachers	10	7	12
Total	100	38	56

(a)

(b)

FIGURE 4: Proportion of teachers: (a) external teachers, (b) proportion of teachers by type.

maintenance, user authority management, and user password modification. The system provides a login interface. In the login interface, the user is only allowed to try to log in three times. If the three logins are unsuccessful, the system will automatically log out. During the same working period of the same client, the system is only allowed to be started once. Version deadlines are set by the system. When a new version of the system is launched, by modifying the system version number in the SQLserver2000 (a database management system) data table, the current version expires and cannot be used continuously, and the user is prompted to contact the academic affairs office to obtain the latest version of the system. Through user rights management, different users have different system interfaces, and the same user has different system interfaces in different working processes. Such a flexible system working mode is conducive to the safe operation of the system, which is closely integrated with the teaching management work.

The input of the teacher information is completed through the teacher information selection interface, and the system automatically completes the input of the teacher code in the background, which ensures the accuracy and reliability of the teacher information. The system provides flexible query methods and the new semester course opening information can be exported. The vocational education management system based on discrete Fourier transform provides class teaching arrangement and report printing function arranged by teachers. The system can automatically calculate the total number of class hours of each teaching class and the total number of class hours of each teacher.

Meanwhile, building an index is also an essential link, through which the location of the records to be searched can be quickly located. But obviously, using a sequential table is not as convenient as using an index table. The index is equivalent to the directory. The required resources can be found according to the directory. The course information of vocational education management system based on discrete Fourier transform is shown in Table 2. For the college, the system can further improve its own management system, allow the college's resources to be reasonably allocated, and promote the rapid transmission of the information released by the college. It can also continuously improve the efficiency of various departments of the college, reduce the management pressure of management workers, and continuously promote the reform of the school management mechanism, so that the college can better adapt to the requirements of today's informatization development. From the teacher's level, they can organize and summarize their own information through the system. If they find errors, they can also revise them. At the same time, it can also publish the

TABLE 2: Course information of vocational education management system based on discrete Fourier transform.

Double teacher ype	Field name	Type of data	Field description
Class I dual-qualified teachers	id	int (30)	Auto increment
Class II dual-qualified teachers	K cmC	varchar (60)	Course title
Class III dual-qualified teachers	k sap	varchar (60)	Class
Total	r kls	varchar (60)	Instructor

recent course schedule according to its own teaching tasks or students' recent test scores. In this way, it can effectively save time and improve office efficiency. There is no need to communicate with each office when releasing a message like the traditional office. From the level of students, the system can provide management functions for every student in the college. Through this system, students can not only inquire about the time and place of class, recent exam results, etc., but also keep abreast of the notices issued by the college in a timely manner.

After using the vocational education management system based on discrete Fourier transform for a period of time, it was decided to investigate the assessment of Z vocational colleges. About 80% of the respondents in Z vocational colleges believed that Z vocational colleges had fair and effective supervision, evaluation, and assessment; 12% of the respondents thought that there was no such process, and 8% of the respondents thought that it was average. According to the interviews, the supervision of all stakeholders was a smooth and stable way. In addition, through interviews, it was found that the school's internal performance evaluation was very scientific, and it paid a lot of attention to stakeholders, especially the teaching staff who were struggling in the front line. Because of the characteristics of vocational schools, the work content of employees was diverse. In addition to daily classroom teaching, there were many practical courses, which were conducted in practice bases or cooperative enterprises, and often required much more effort than classroom teaching. There were various forms of assessment in schools. Teaching was based on the amount of class hours, and the others were averages. No attention was paid to scientific research. Obviously, the supervision, evaluation, and assessment of Z vocational colleges can effectively play an incentive role for stakeholders within the school. The school had internal financial supervision, evaluation, and assessment. The school assessment situation is shown in Figure 5. The functions realized by the system are from course management, to plan management, to course start, and teaching history information management. This management workflow absorbs and produces a large amount of teaching management information. While the system completes the relevant management work efficiently and with high quality, it also carefully maintains various management information. All kinds of information continuously enter this system. Through processing and conversion, standard information resources are formed for teaching management work. Through the network environment, the work efficiency of teaching management has been greatly improved. The information sharing provided by the system is multifaceted, including information content,
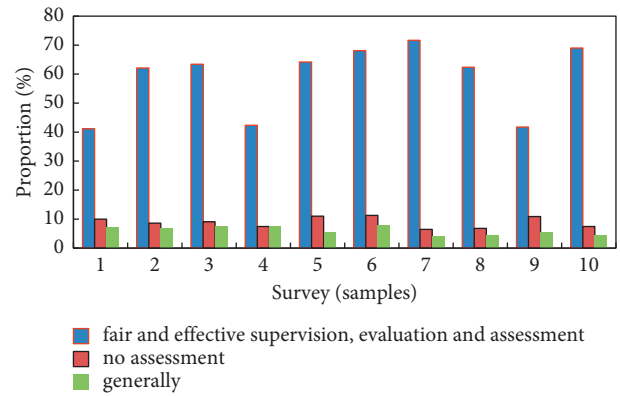

FIGURE 5: School assessment situation.

layout, file format, and so on. According to different user rights, sufficient information resources can be provided in a targeted manner.

In order to test the satisfaction of the vocational education management system based on discrete Fourier transform, this paper randomly selected the scores of 10 classes for data processing. A total of 50% of teachers were particularly satisfied with the tables generated by the discrete Fourier transform-based vocational education management system. They believed that the vocational education management system based on discrete Fourier transform was very fast in data processing, the processing speed of which was within 0.1 s. About 36% of teachers felt basically satisfied; 12% felt it was average, and only 2% felt very poor. It was learned from the interview that teachers who felt very poor believed that the data processing of the system was stuck, which is also where the system needs to continue to be optimized. The satisfaction survey of vocational education management system based on discrete Fourier transform is shown in Figure 6. The operation has been prepared in terms of technology and management. In the trial operation stage, along with the realization of the workflow of each functional module, the college has compiled a detailed operation guide. In accordance with the work plan, the training of relevant users is carried out in time. The training is aimed at all relevant personnel of system operation, and timely answers various problems encountered in the operation of the system. The training process is also a process in which various management ideas collide with each other, and new problems are constantly discovered, accompanied by recognition and debate. These exchanges and interactions are very necessary for the operation and upgrading of the vocational education management system based on discrete Fourier transform.
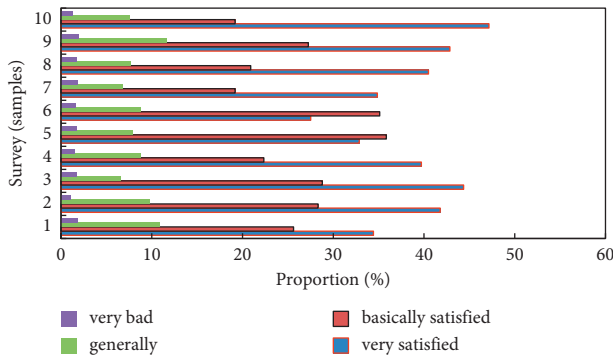
Figure 6: Vocational education management system satisfaction survey based on discrete Fourier transform.

4. Conclusion

With the continuous promotion and application of information technology, educational administrators process and use a large amount of information every day, but only using computers to deal with daily affairs can no longer meet the requirements of administrators. The DFT algorithm proposed in this paper is an efficient and fast address generation algorithm. The algorithm system automatically calculates data such as the average weekly credit hours of each semester, the total planned credit hours, the total credit hours of practical teaching, and the percentage of the total credit hours of different types of courses to the total planned credit hours. The software system studied in this paper really follows the thinking of "people," and its fault-tolerant, error-correcting, and self-adaptive abilities are all very powerful. In addition, it has a very simple operation process and also provides support for reversible operations based on special requirements. The construction of higher vocational teaching management information under the network conditions is an important topic that higher vocational colleges pay more and more attention to. This paper will bring profound changes to higher vocational teaching management. This paper not only realizes the networkization of teaching plan management, course start plan management, and student achievement management but also realizes the standardization and information sharing of basic teaching management information. The vocational college's teaching management informatization level has reached a new level. However, this paper does not compare it with the systems of other schools, and the exploration of intervening teacher-student behavior, learner characteristics, etc., need to continue to be realized.

Data Availability

The data used to support the findings of this study are available from the author upon request.

Conflicts of Interest

The author declares no conflicts of interest.

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