



Financial Management Course Distance Teaching Method Based on B/S Model

Xi Chen^(✉) and Shu-Yang Zhang

SIAS University, Zhengzhou 451150, China

Abstract. In view of the low efficiency of traditional teaching methods, this paper puts forward the financial management course distance teaching method based on B/S mode. This paper analyzes the teaching environment and platform of financial management, constructs the remote teaching platform based on B/S mode, designs the financial management platform module from four aspects: financial voucher management, financial account management, financial statement management and user management, and analyzes the specific content of the remote teaching of financial management course in detail from three aspects: preparation before class, classroom analysis and discussion, summary and evaluation and writing report. The test results show that the teaching method is high and has a good teaching effect.

Keywords: B/S model · Financial management · Courses · Distance learning

1 Introduction

Along with our country joins WTO and the financial system reform gradually thorough, our country enterprise is facing the unprecedented competition pressure [1]. Under such circumstances, enterprises all over the world have made use of various advanced information technologies, especially the computer network technology based on Internet technology, to actively promote the construction of enterprise informationization, so as to realize remote processing, resource information sharing and centralized management, decentralized operation and improve work efficiency, so as to obtain advantages in the fierce competition and make the enterprises grow and develop continuously [2]. At the same time, the traditional business model and management model is not suitable for today's network information age development needs. Enterprise financial management is an important part of enterprise management, and plays an important role in enterprise management [3]. At present, most of the students in vocational schools have poor cultural foundation, no enthusiasm for learning, lack of interest in learning and poor autonomy in learning [4]. Under this background of students, when traditional teaching methods are adopted, class becomes a synonym for "pain". The phenomenon of skipping class occurs from time to time. In class, a common headache for teachers often appears: students are forced to sit in the classroom, sleep, play with mobile phones and talk, plagiarize homework collectively after class, and live for 60 points in the exam [5]. This

kind of learning state not only makes teachers distressed, but also makes students miserable, and the enthusiasm of teachers and students is hit. In order to arouse the interest of learning, the B/S model is introduced, the content of financial management course is decomposed into several specific learning tasks, and the distance teaching method of financial management course based on B/S model is proposed to guide students to use the rich resources of the world university town space to explore and study independently and complete the task. In this way, students are no longer “passive learning”, but “active learning”, teaching becomes easier and more effective, students in the process of completing the task also exercise the practical ability and innovation ability.

2 Financial Management Teaching Environment and Platform Construction Content

2.1 Financial Management Teaching Environment

Since the reform and opening up, our country's political and economic environment has changed with each passing day. Entering the new century, the socialist economic and political system reform has been deeply promoted, which has a far-reaching impact on the teaching of financial management. To sum up, it is mainly reflected in the following aspects:

First, in terms of enterprise organization, with the deepening of the reform of the state-owned enterprise system, a large number of state-owned enterprises have been restructured into companies and listed companies, and the modern enterprise system has been implemented in most state-owned enterprises. At the same time, due to the strong support of the Party and the government, the quantity and quality of private enterprises have developed rapidly.

Secondly, in the capital market, with the reform of the RMB exchange rate, the RMB has taken a big step in the direction of free convertibility; the institutions and business scope of international financial institutions conducting business in China are becoming larger and larger; the bond market is gradually opening up, and the share-trading reform in the stock market is proceeding smoothly. All of these will make our capital market develop in an efficient, normative and healthy way, and become an important guarantee for the healthy development of enterprise financial management.

Third, in terms of opening up to the outside world, with the deepening of opening-up policies and the strengthening of efforts to attract foreign investment, more and more transnational companies have set up branches or invested in enterprises in our country; and with the development of opening up to the outside world, more and more domestic enterprises go abroad to participate in global economic competition [6].

Fourthly, in terms of fiscal and tax policies, in order to fulfill China's commitment to join the WTO, we have intensified institutional reforms, such as the reform of the customs tax system, enterprise income tax and individual income tax, so as to ensure that each subject enjoys national treatment and fair competition in the market economy.

Fifthly, with regard to education reform, in order to raise the level of education, especially higher education, and train high-quality talents, the State has put forward new requirements for the objectives and tasks of higher education and the quality of education.

In particular, the documents No.4 and No.5 issued by the Ministry of Education in 2004 have exerted great influence on the reform and development of higher education [7].

2.2 Content of Financial Management Teaching Platform

This paper studies the enterprise financial data management system, analyzes, designs and realizes the enterprise financial data management system by using the structure technology of data layer, business application layer and data access layer, and tests the main functions of the system. Storing data in SQL database, programming business functions and data management functions, and establishing the software architecture of enterprise financial data management system [8].

According to the functional requirements of the enterprise financial data management system, the financial data management system is divided into several modules: system initialization, system setup, account management, voucher management, financial data management, account book management and financial statement management. The system can manage the financial data of the enterprise in an all-round way, so that the financial data management personnel of the enterprise can grasp the state of the financial data of the enterprise and the operation situation of the data in real time. All of these work are carried out on the Internet, which realizes paperless office, ensures the smooth progress of the financial data management of the enterprise and reduces the pressure of the staff [9]. The design of the system needs to collect and collect the data involved in the financial data management business accurately. The accurate data collection information will improve the system's operability, and make the designed system meet the needs of the manager and the user more, and make the data analysis and management of the financial data management system in a reasonable state.

3 Distance Teaching Method of Financial Management Course Based on B/S Mode

3.1 Construction of Distance Learning Platform Based on B/S Mode

The distance teaching platform of financial management course based on B/S mode is user-centered. Its service object is students, teachers and managers. The core is to provide personalized service. But the traditional network teaching method's center usually is the resources, the primary goal provides the sharing resources, the user cannot obtain the personalized service [10]. Distance education platform based on B/S model can provide users with learning programs, the platform can save the user's learning programs, so that users can obtain personalized information. Traditional teaching methods seldom record the user's learning log, or do not record directly, so users can not get personalized information. In the courseware, direct on-demand learning content is to play the whole process, without personalized interaction, the platform can not track the user's watching process, can not give instructive teaching suggestions. But based on B/S model, the interaction frequency between user and system is large, users can directly use the system to achieve user interactive transmission, improve user experience has an important impact.

The distance teaching platform of financial management course based on B/S mode is shown in Fig. 1.

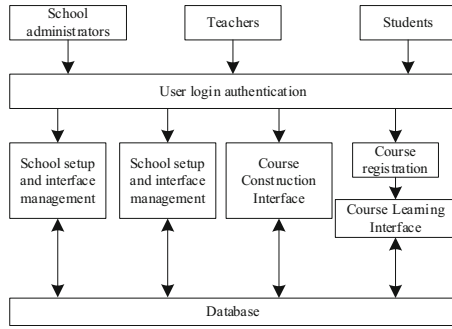


Fig. 1. Remote teaching platform of financial management course based on B/S mode

Along with our country joins WTO and the financial system reform gradually thorough, our country enterprise is facing the unprecedented competition pressure. Under such circumstances, enterprises all over the world have made use of various advanced information technologies, especially the computer network technology based on Internet technology, to actively promote the construction of enterprise informationization, so as to realize remote processing, resource information sharing and centralized management, decentralized operation and improve work efficiency, so as to obtain advantages in the fierce competition and make the enterprises grow and develop continuously. At the same time, the traditional business model and management model is not suitable for today’s network information age development needs. Enterprise financial management is an important part of enterprise management, and plays an important role in enterprise management. At present, most of the students in vocational schools have poor cultural foundation, no enthusiasm for learning, lack of interest in learning and poor autonomy in learning. In this context, the use of traditional teaching methods, class has become a “pain” synonym, the phenomenon of truancy occurs from time to time, the classroom is often a common headache for teachers: students are forced to sit in the classroom, sleep, play cell phone, talk, homework, collective plagiarism, examination 600,000. This kind of study condition not only lets the teacher distress, also lets the student be miserable, teacher and student’s enthusiasm receives the blow. In order to arouse students’ interest, B/S model is introduced, and the financial management course is divided into several specific learning tasks to guide students to explore independently and complete the task. In this way, students are no longer “passive learning”, but “active learning”, teaching will become more relaxed, more effective, students in the process of completing the task also exercise the practical ability and innovation ability.

3.2 Financial Management Teaching Environment and Platform Construction Content

3.2.1 Financial Management Teaching Environment

Since the reform and opening up, our country’s political and economic environment has changed with each passing day. Entering the new century, the socialist economic and political system reform has been deeply promoted, which has a far-reaching impact on

the teaching of financial management. To sum up, it is mainly reflected in the following aspects:

First, in terms of enterprise organization, with the deepening of the reform of the state-owned enterprise system, a large number of state-owned enterprises have been restructured into companies and listed companies, and the modern enterprise system has been implemented in most state-owned enterprises. At the same time, due to the strong support of the Party and the government, the quantity and quality of private enterprises have developed rapidly.

Secondly, in the capital market, with the reform of the RMB exchange rate, the RMB has taken a big step in the direction of free convertibility; the institutions and business scope of international financial institutions conducting business in China are becoming larger and larger; the bond market is gradually opening up, and the share-trading reform in the stock market is proceeding smoothly. All of these will make our capital market develop in an efficient, normative and healthy way, and become an important guarantee for the healthy development of enterprise financial management.

Third, in terms of opening up to the outside world, with the deepening of opening-up policies and the strengthening of efforts to attract foreign investment, more and more transnational companies have set up branches or invested in enterprises in our country; and with the development of opening up to the outside world, more and more domestic enterprises go abroad to participate in global economic competition.

Fourthly, in terms of fiscal and tax policies, in order to fulfill China's commitment to join the WTO, we have intensified institutional reforms, such as the reform of the customs tax system, enterprise income tax and individual income tax, so as to ensure that each subject enjoys national treatment and fair competition in the market economy.

Fifthly, with regard to education reform, in order to raise the level of education, especially higher education, and train high-quality talents, the State has put forward new requirements for the objectives and tasks of higher education and the quality of education. In particular, the documents No.4 and No.5 issued by the Ministry of Education in 2004 have exerted great influence on the reform and development of higher education.

3.2.2 Content of Financial Management Teaching Platform

This paper studies the enterprise financial data management system, analyzes, designs and realizes the enterprise financial data management system by using the structure technology of data layer, business application layer and data access layer, and tests the main functions of the system. Storing data in SQL database, programming business functions and data management functions, and establishing the software architecture of enterprise financial data management system.

According to the functional requirements of the enterprise financial data management system, the financial data management system is divided into several modules: system initialization, system setup, account management, voucher management, financial data management, account book management and financial statement management. The system can manage the financial data of the enterprise in an all-round way, so that the financial data management personnel of the enterprise can grasp the state of the financial data of the enterprise and the operation situation of the data in real time. All of these work are carried out on the Internet, which realizes paperless office, ensures the smooth

progress of the financial data management of the enterprise and reduces the pressure of the staff. The design of the system needs to collect and collect the data involved in the financial data management business accurately. The accurate data collection information will improve the system’s operability, and make the designed system meet the needs of the manager and the user more, and make the data analysis and management of the financial data management system in a reasonable state.

3.3 Financial Management Platform Module Design

The financial management platform is composed of modules, which are logically divided into three modules: management module, teacher module and student module. Management module for system administrator maintenance and management; The teacher module is used by the system teacher, which is used to assist the teacher to impart knowledge, preside over discussion, examination, and manage the classroom, etc. The student module is used for students to study by themselves, answer questions, take examinations and participate in discussions. The entire logic module is shown in Fig. 2.

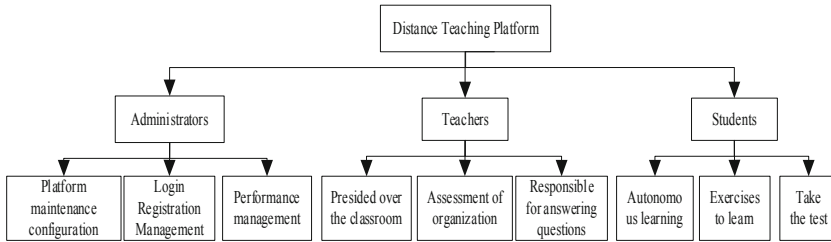


Fig. 2. Logic function module diagram of financial management platform

3.3.1 Financial Voucher Management Module

Sequence diagrams can show different business objects, and the design of a sequence diagram can be treated as a requirement file in addition to recording the current events of an organization in order to realize the future delivery requirements of a system. Sequence diagrams in the design of the same organization, the financial management platform of financial voucher data query, financial voucher data design of the main query function, Sequence diagram is to achieve a system requirements. The financial voucher management module is shown in Fig. 3.

Voucher management is an important part of financial information management, which is related to the records of financial flow. Voucher management module is divided into three parts, voucher entry, voucher center and voucher bookkeeping design. The system provides many functions to input the voucher conveniently and efficiently, select the voucher management, click the voucher input, enter the voucher input interface, and enter the voucher input function. After the month is selected, the system automatically determines the input number, voucher word and voucher number, calls the journal entry of the duplicated voucher, and pops up the new interface, where the voucher interface appears and the user saves the confirmation after modification.

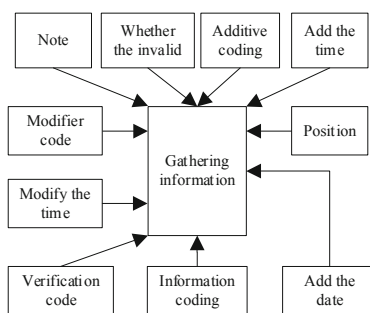


Fig. 3. Financial voucher management module

3.3.2 Financial Accounts Management Module

The management of financial accounts is divided into two parts, namely, the management of beginning data and the management of ending data. The management of beginning data includes the entry of beginning data of subjects, the entry of beginning data of auxiliary projects and the entry of beginning data of cash flow. The management of ending data includes the interface operation functions of carrying forward profits and losses, closing accounts at the end of a month, carrying forward accounts to the next year and automatic transfer accounts. Financial account management business function, to classify the financial accounts and documents and verify the relevant information. Then, the obsolete financial account information is cleaned up, and the deletion operation sequence of financial account is designed. Design “carry forward profit and loss” wizard interface, choose the end of processing a carry forward profit and loss, transfer processing operation function. You can also manually make vouchers to carry forward profit and loss. Bookkeeping vouchers shall be automatically generated to automatically transfer all the current balances of all profit and loss accounts to the profit account or profit distribution account of the current year, and the carry-over profit and loss function provided by the system shall reflect the total profits or losses realized by the enterprise in an accounting period, transfer the balance of profit and loss adjustment of previous years to the “profit distribution” account, and the balance of all profit and loss accounts shall be transferred to the “profit of the current year” account.

3.3.3 Financial Statement Management Module

The client of the system will receive the information of the financial statements sent by the financial management platform, and the sequence of receiving the information of the statements. The management module of the client of the system will receive the information of the statements sent by the financial management platform in the network, and the management module of the client of the system will start to receive the data of the statements, and display the information of the financial statements received on the interface of the client of the system. Completed the system client to receive financial statements information operation design.

The management of financial statements is the core of the financial data management system. The design of the management of financial statements is divided into

several modules such as file operation, statement processing, statement formula and the preparation of common statements. The sub-functions of the management of financial statements include the functions such as the creation, deletion and editing of statements and the preparation of common statements such as profit statements and balance sheets.

The balance sheet system has preset the corresponding statements such as the balance sheet, and can be used only with appropriate modifications. In the menu bar, click Open in the file or click the Open button on the toolbar. Click on the balance sheet and click OK, or double-click on the balance sheet to open the financial statements. Double-click the cell to modify the design, first click the formula/data conversion button into the formula state, modify the basic operation of the report formula.

3.3.4 User Management

In the administrator pipeline function module, its function is to submit the instructions issued by the system, for users to manage, this part includes the Web site to publish the latest information, teachers and students use the system to use accounts, top, delete posts and other permissions. The main functions of administrators are as follows:

Administrator space → access system → input user name, password → match → system announcement user management, educational management, forum management → exit system; Administrator space → access system → input user name, password → end of the mismatch.

User management module is used for the current user consent management, which can modify and update the information. The user management object is transferred to the add user interface after logging in, then submits the user information to the user list, and returns the information successfully. As shown in Fig. 4.

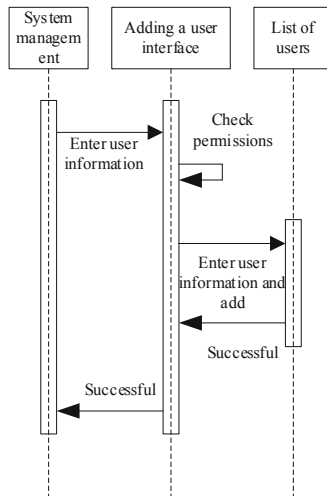


Fig. 4. Order of adding users

After the administrator opens the new interface, enter the user number, name and address information, confirmed to be correct, submit to save, and display the saved user list in the interface.

3.4 Contents of Distance Teaching of Financial Management

The distance teaching platform based on B/S model is designed to model the real situation and form a case for students to think, analyze and make a decision.

3.4.1 Preparation Before Class is the Premise of Case Teaching

To carry out case teaching, first of all, we should carefully prepare before class. Preparation before class mainly carries on the case the choice, the revision and the design. In the process of case selection, we should consider the situation of students' knowledge storage, and choose appropriate cases according to the teaching objectives of financial management course. If necessary, the original cases shall be modified and adjusted, and the relevant cases of newspapers, periodicals and books may be rewritten, or the cases may be rewritten according to the actual economic business in the process of enterprise investigation. Also should carry on the case the design, the design level case question, guides the student to ponder positively. In order to familiarize students with the case, for more complex cases, the case materials and discussion outlines should be distributed in advance to prepare for class discussion and analysis.

3.4.2 Classroom Analysis and Discussion as the Main Link of Case Teaching

Case teaching in the classroom teaching process, teachers should change the teaching concept, so that students become the main body of teaching, teachers play a supporting and guiding role. Specifically, including the following aspects: First, the introduction of the case, through text, video, audio, multimedia, teacher narrative, role playing and other forms of the case into the financial management teaching of each link. Second, case analysis, can be taken to guide the analysis and thematic analysis, the analysis process should be clear about the sequence of events and the thread of the problem, combined with financial management curriculum project analysis. Third, the case discussion, the case discussion is the case teaching most main link, in the discussion process the teacher must play the guiding role. According to the details of the case materials provided by the teacher, the case discussion can be divided into three forms: discussion, debate, discussion, discussion is the most commonly used way. Students can be grouped into small groups, or group thinking of the whole class discussion, but also according to the students generally respond to the difficulties of the thematic discussion. In the process of analysis and discussion, it is helpful for students to improve their abilities of language organization, expression and adaptability.

3.4.3 Summary and Evaluation and Writing Reports Are the Final Goal of Case Teaching

After the case discussion, the teacher should summarize and evaluate the whole discussion process. The contents of summary and evaluation include whether the students'

analysis ideas are correct, whether the analysis methods are appropriate, and whether the conclusions are feasible. It is important to note that case teaching does not provide standard answers, but rather gives students room to think about how to analyze and deal with problems in a given situation. Teachers can also assign students to write case analysis reports, case report writing can improve the ability of students to express in words, lay the foundation for writing papers later.

4 Testing

In order to verify the rationality of the distance teaching method of financial management course based on B/S model, the experiment test analysis is carried out.

4.1 Experimental Platform

Considering the function of the experiment platform, the teacher is used as the LAN, the students can choose the courses by themselves. The experiment platform is shown in Fig. 5.

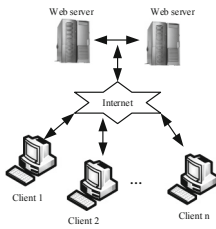


Fig. 5. Experimental platform

The experimental navigation table is shown in Table 1.

Table 1. Experimental navigation table

Name	Remarks
Home page	Return
Personal data	Personal center
Courseware upload center	Courseware upload
Learning center	Download learning materials
Video course	Participation in teaching video
Press release	Press release
Manage users	Management of teachers and students
Answering question	Enter the system

4.2 Experimental Results and Analysis

The experimental test is mainly a black box test, and the black box test is mainly for the corresponding operation of the research methods and traditional teaching methods. The application black box test content is shown in Table 2.

Table 2. Black box test content

Serial number	Test content
1	Registration module test
2	Export student registration information
3	Using the system without login
4	The maximum length of the course is 30 min

The black box test contents are as follows:

50 students were selected for the test, with 45 correct information and 5 wrong information.

- (1) The wrong information appeared is the wrong ID number.
- (2) Using JavaScript functions, submit the form for judgment.

After the actual user requirements, the test results of the two systems are shown in Table 3.

According to the test results in Table 3, most of the test results of traditional teaching methods failed, and the application of the methods was not stable. The test results of the design based on B/S research method are all passed, and the application of the method is relatively stable, meeting the teaching needs of students and teachers, and reaching the expected goal.

In order to further verify the high efficiency of teaching based on B / S mode, it is necessary to compare and analyze the teaching efficiency of traditional teaching method and this method, and the comparison results are shown in Fig. 6.

Table 3. Test results of two methods

Serial number	Function point	Traditional teaching methods	Research methods
1	Page setup	Failed	Adopt
2	Students add message information	Adopt	Adopt
3	Students sign up online	Failed	Adopt
4	Student learning survey	Failed	Adopt
5	Browse the course video	Failed	Adopt
6	Browse online help	Failed	Adopt
7	System background settings	Adopt	Adopt
8	Manage message information	Failed	Adopt
9	Manage registration information	Adopt	Adopt
10	Management of teaching evaluation information	Failed	Adopt

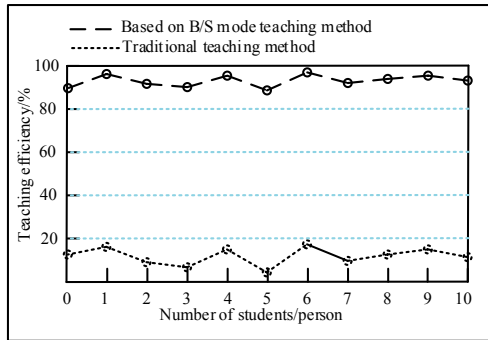


Fig. 6. Comparative analysis of teaching efficiency of different methods

As can be seen from Fig. 6, the teaching efficiency using traditional teaching methods is the highest at 18% and the lowest at 5%. The teaching efficiency based on B/S mode is 99% at the highest and 89% at the lowest. Compared with traditional teaching methods, the proposed teaching method based on B/S model has higher teaching efficiency and higher value and significance in practical application.

4.3 Suggestions for Optimizing Teaching Methods

According to the teaching task of financial management in the new era, combined with the problems existing in the current financial management teaching, the optimization of financial management teaching methods can be started from the following aspects:

First, strengthen the combination of theory and practice, optimize the link of practice education. From the education of modern financial management, there are more or less problems in the practice education of financial management in colleges and universities. Mainly in: First, the lack of a stable practice base, student practice in the status of continuous transfer. This is not conducive to summing up the experience of practice education, but also conducive to the establishment of good links with the employer to improve the effectiveness of practice education. Secondly, the employers are in the motive of protecting trade secrets, so it is difficult for the students to have a real understanding of the practice of financial management. Third, the lack of strict control system of the practice link. Many schools lack the grading standard of practice link, practice content, practice progress, instructor's guidance method and system, which make the practice link teaching in a loose state. To this end, schools may make improvements from the following aspects: on the one hand, they may establish financial supervision internship bases to maintain long-term good cooperation with employers; on the other hand, they may establish and improve the education system for the internship stage, including the control measures for the requirements of instructors, internship contents, internship progress and other aspects; and, on the other hand, they may establish financial management scenario simulation laboratories to enable students to personally understand the working process and basic working methods of financial management.

Second, change the "cramming" education, cultivate students' ability to learn independently. At present, in the teaching of financial management, teachers pay too much attention to the imparting of book knowledge, but often neglect the cultivation of students' innovation and learning ability. In order to change this situation, teachers should make full use of the advantages of information resources, encourage students to study independently and innovate learning fields and methods. For example, after the students have mastered the method of collecting network resources, they can be guided to collect the data of capital structure and dividend payment of some international large enterprises as the basis of analysis; they can also understand the specific management methods of capital structure and dividend policy of western enterprises, and analyze the differences among them with the combination of theoretical knowledge. In this way, students not only master the knowledge of books, but also cultivate the ability of independent learning, which has a better foundation for future work and adapt to the new environment.

Third, the use of case teaching, training students the ability to integrate theory with practice. Case teaching is an enlightening, practical teaching method that can improve students' comprehensive analysis ability and creativity. It can also increase students' interest in learning and improve learning effect. In case teaching, the teacher should make careful preparation, be familiar with the details and background knowledge of the case, effectively control the process of case discussion, pay attention to enlightening students, be good at summing up students' creativity, and be able to combine the background knowledge of the case with the book knowledge to summarize, so as to enable students to deepen the understanding of theoretical knowledge and achieve active learning.

Fourth, bilingual teaching should be adopted to cultivate students' ability to learn advanced western theories. In the teaching of financial management, it is very important to cultivate students' ability to read foreign documents and classical teaching materials, which is an important channel for students to learn advanced financial management theory and method. Therefore, the qualified colleges and universities should promptly carry out bilingual teaching. To improve students' ability to learn advanced western financial management theory. In bilingual teaching, attention shall be paid to the selection of teaching materials (classical teaching materials and the latest teaching materials), the training of teachers and the combination of bilingual teaching and financial management in China.

Fifth, pay attention to the use of situational teaching, simulation experiments and other teaching methods to improve students' understanding of capital market operation, financial decision-making process. In financial management, such as the operation of capital market, financial decision-making process is very complex, if the traditional classroom teaching, it is difficult for students to immediately understand, more difficult to form an effective memory. Therefore, if we can set up a simulation lab of stock exchange or financial decision, let the students operate according to the operation order of capital market or the financial decision order, we can really experience the process, deepen the understanding and understanding.

5 Concluding Remarks

The enterprise financial data management platform will connect with the department network information center, and communicate with all units within the enterprise. Financial data management system will provide the necessary technical means for the financial data management, information disclosure and management of enterprises. Enterprise financial data management platform, the maximum realization of enterprise financial demand data management specialization, centralization and large-scale, can quickly apply network data to the actual financial information services to play a role. The design and research of enterprise financial data management platform and the digitization and networking of financial data management will improve the efficiency of enterprise financial management, and have some practical value. For future work, we can strengthen the combination of theory and practice; Change the "cramming" education, cultivate students' ability of independent learning; Using case teaching, training students' ability to connect theory with practice and other aspects of a more in-depth study.

References

1. Mauer, M.A.D., Sring, D., Stancus, B., et al.: A 2-year follow-up MRI study for the evaluation of an age estimation method based on knee bone development. *Int. J. Legal Med.* **133**(1), 205–215 (2019)
2. Wang, C., Yang, X., Gu, B., et al.: Sensitive and simultaneous detection of SARS-CoV-2-specific IgM/IgG using lateral flow immunoassay based on dual-mode quantum dot nanobeads. *Anal. Chem.* **92**(23), 15542–15549 (2020)
3. Roberts, R., Campillo, A., Schmitt, M.: Prediction and management of CAD risk based on genetic stratification. *Trends Cardiovasc. Med.* **30**(6), 328–334 (2020)

4. Fouladi, E., Baghaee, H.R., Bagheri, M., et al.: Power management of microgrids including PHEVs based on maximum employment of renewable energy resources. *IEEE Trans. Ind. Appl.* **12**(99), 1–10 (2020)
5. Wang, B., Fang, G., Liang, J., et al.: Efficient multiscale analysis method for the compressive progressive damage of 3D braided composites based on FFT. *Acta Mech.* **231**(15), 1–15 (2020)
6. Muthukumar, N., Srinivasan, S., Subathra, B., et al.: Teaching industrial Internet-of-Things-based model-predictive controller. *IEEE Trans. Educ.* **6**(99), 1–9 (2020)
7. Kanoun, A.A., Kanoun, M.B., Merad, A.E., et al.: Toward development of high-performance perovskite solar cells based on CH₃NH₃GeI₃ using computational approach. *Sol. Energy* **182**(4), 237–244 (2019)
8. Liu, S., Bai, W., Zeng, N., et al.: A fast fractal based compression for MRI images. *IEEE Access* **7**, 62412–62420 (2019)
9. Breen, C., Zhu, T., Bond, R., et al.: The evaluation of an open source online training system for teaching 12 lead electrocardiographic interpretation. *J. Electrocardiol.* **2**(3), 454–461 (2016)
10. Jianqiu, L.: Construction of real-time interactive mode-based online course live broadcast teaching platform for physical training. *Int. J. Emerg. Technol. Learn.* **13**(06), 73–80 (2018)