Research on the Modularized Innovation Teaching Model of University Management Accounting Based on the Cultivation of Applied Talents

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Abstract: In the practice of management accounting teaching in colleges and universities, the traditional management accounting teaching model of colleges and universities has been unable to meet the students' desire for knowledge. To this end, a modular innovation teaching model of university management accounting based on application-oriented talent training was designed. BBS servers, mail servers, application servers, and database servers are used to design access models; Using the module of Web and data mining design model, the function of each user of the model is clarified, and a modular innovation teaching model of university management accounting based on application-oriented talent training is constructed. Through experimental research and analysis, the proposed modularized innovative teaching model of university management accounting based on application-oriented talent training can effectively make up for the shortcomings of traditional teaching models. It can satisfy students' desire for knowledge, and improve teaching efficiency by 36%.

Keywords: Talent cultivation; Colleges and universities; Teaching model; Modularization; Accounting

1. Introduction

Accounting education in colleges and universities is mainly to cultivate accounting professionals with certain accounting practical operation ability. Therefore, strengthening accounting professional skills training and improving students' hands-on ability are the main contents of college accounting teaching reform. Basic accounting is a basic course in accounting that studies the basic theories and basic methods of accounting. Its purpose is to help beginners understand the basic theories and basic knowledge of accounting, master the methods of accounting, and understand the basic knowledge system of accounting. It can train students to analyze problems, solve problems and the ability to deal with accounting business technology [1], and lay the foundation for the subsequent accounting professional courses. In the past, we always believed that basic accounting teaching is to let students learn relevant accounting principles and accounting basic accounting methods in order to prepare students for professional accounting courses in the future. Therefore, in the traditional accounting teaching, the word-expression economic business is usually used, and the "Ding" account is used to explain the accounting treatment mode. It emphasizes the teaching of theoretical knowledge, the model and comprehensiveness of knowledge, and pays insufficient attention to the simulation experiment [2]. Because the teaching process is simple

and easy, this traditional teaching is still the main way of accounting teaching in vocational schools. However, under this teaching mode, students generally feel that they are struggling with basic accounting learning. The specific performance is that students are tired of learning, lack of motivation for learning, and difficult to be qualified for accounting after graduation. Aiming at this kind of learning situation for students and the teaching goal of "zero distance" for follow-up learning and employment after graduation, in the course of this research, we try to change traditional concepts and change the teaching mode - The modular teaching mode is used to strengthen the simulation experiment teaching to stimulate students' interest in learning, improve the learning efficiency of students, and prepare students for job hunting in the future. It also achieved good results. This paper mainly studies the construction of modular innovation teaching model of university management accounting based on application-oriented talent training.

2. Design of Modularized Innovation Teaching Model for University Management Accounting

The modular innovation teaching model of university management accounting based on application-oriented talent training mainly provides teaching services by WWW server, BBS server, mail server, application serv-

er and database server. Students, teachers, and administrators access the instructional model via the Internet/Intranet [3]. In which, the BBS server is mainly to realize real-time discussion between students and teachers, between students and students through shared whiteboard; The mail server mainly implements non-real-time interaction between teachers and students, students and students, such as students asking difficult questions to teachers, asking teachers to answer questions, etc. The database server is used to store various teaching resources, such as domain knowledge base, student information database in student model, cognitive state library, learning history library, test history library, learning/testing breakpoint library, teaching strategy library, teaching diagnosis library in the teacher model, etc. Figure 1 shows the framework of the modular innovation teaching model for university management accounting.
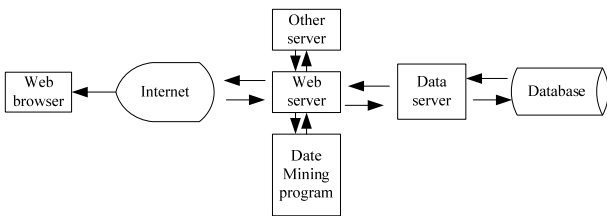

Figure 1. Framework of modular innovation teaching model for university management accounting

2.1. Model design of the model

The modular innovation teaching model of university management accounting based on Web and data mining mainly adopts data mining technology. By analyzing the vast amount of information accumulated on the site to discover patterns and rules of interest to the user, the curriculum designers and managers are provided with information on improving the curriculum design and refactoring the site and providing teachers with information about student learning courseware. According to the students' learning situation, they provide learning content with different levels of difficulty to establish an intelligent and personalized distance education environment [4]. The structure of the model is as follows: Where, the Data Mining module is the key component to establish this intelligent and open distance learning environment. It mainly provides the teachers and managers with relevant excavation patterns and rules by analyzing the data in the database. The module is mainly composed of five parts: teaching activity module, information exchange module, configuration execution module, examination module, and evaluation module. Figure 2 shows the module architecture diagram of the teaching model.

2.1.1. Teaching activity module

The teaching activity module can provide a real-time two-way interactive multimedia network teaching envi-

ronment for the synchronous process teaching on the campus network, and also provides an independent learning network teaching environment for the asynchronous process teaching on the campus network [5]. One of the most influential network architectures at present is the open network service architecture OGSA, which represents all transactions as a GRID service, including computing resources, storage resources, programs, data, etc., it can support open and transparent services through standard interfaces and protocols. The modular teaching activity module has three functions: multimedia teaching and its control functions, modular teaching live/on-demand function, and teaching audio broadcasting function [6].
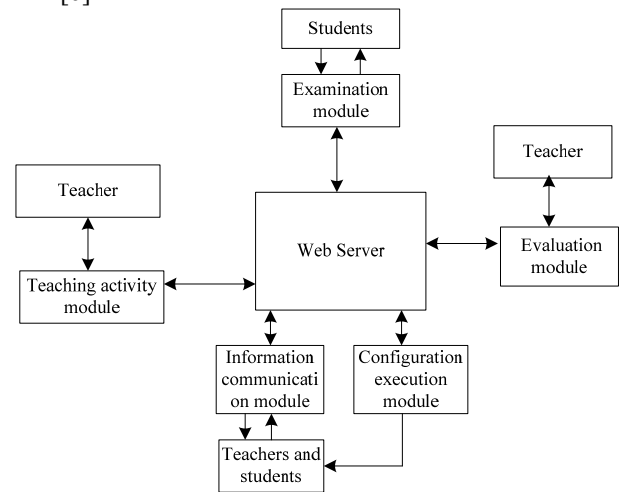

Figure 2. Module architecture diagram of the teaching model

2.1.2. Information exchange module

The information exchange module is a web-based design idea. Web services, WSDL (Web Services Description Language) or SOAP (Simple Object Access Protocol) technology are used to provide a convenient channel for information exchange between models in the application layer. Sub-functions under this module include Blog (weblog), Wiki (hypertext model based on a common creative idea, support for collaborative writing), RSS(automatically aggregates the latest teaching resources to ensure that teachers get the latest multimedia material and learning objects in the first place). This module provides a broader time and space for the exchange of information between teachers and students, students and students [7].

Compared with the traditional accounting classroom teaching mode, the modular innovation network teaching model makes the teacher and the student spatially separated, which makes it difficult for teachers and students to realize real-time interaction. Therefore, students usually only can learn independently. When students have difficulties, how to get effective Q&A assistance is a

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problem that the modular innovation network should solve. At present, most of the management accounting modular innovation network education is provided by teachers to answer questions in an asynchronous manner to help students solve learning problems, which greatly affects students' learning progress and learning enthusiasm [8]. There are also some information exchange modules that use real-time answers, but require the on-duty teacher to answer online, which increases the burden on teachers and thus affects the teaching effect. In this model, several synchronous or asynchronous sub-modules can be used to provide students with the most comprehensive and accurate answers. When students have problems, they can post questions in the BBS discussion community to wait for the teacher or interested classmates to answer, or they can go directly to the real-time Q&A area, and the participants (teachers or other students) will give answers in real time. In addition, students can also ask the instructor by email.

2.1.3. Configuration execution module

Colleges and universities must establish a unified configuration execution module to reduce information garbage on the one hand, and set up necessary network accounting resource navigation on the other hand to unify the resources of the entrance and exit, so as to use resources more quickly. Depending on the way the process is combined and collaborated, modeling is done through static or dynamic composition orchestration, and UML's collaboration diagram is used as a tool to build a configuration interaction model. The executable business process execution language BPEL is generated by the conversion rules and the code generation tool, and the corresponding sub-modules, such as class scheduling module, course selection module, grade inquiry module, student status management module, are developed to realize the standardization and rapid optimization of the business process of the university.

2.1.4. Examination module

There are a large number of modules for implementing the test, which are mainly composed of two parts: test management and self-test, including sub-modules such as the printing of the admission ticket, the extraction of the test questions, the answer sheet, and the change of the volume to the statistical summary of the results [9]. These sub-modules provide comprehensive support for organizing students for formal exams and student self-tests. In addition, in order to ensure the normal operation of the exam, the video conference sub-module must be used together, mainly to supervise the discipline of the examination room. The management of the test questions is the responsibility of the teacher. The management collects the accumulated test questions, test materials and test papers. On this basis, the test papers can be generated

manually or intelligently for examination or self-test. It is mainly composed of sub-modules such as subject management, chapter management, test question bank management and test paper library management.

2.1.5. Evaluation module

The evaluation module provides an automated learning assessment method for the modularized teaching model of university management accounting. It collects the various learning behaviors of students in the module, processes and analyzes the various learning behaviors of the students in the module, and makes quantitative and non-quantitative assessments [10]. For example, in the specific implementation process, statistical research is conducted on the student visit records of the accounting courses, and a comprehensive and objective assessment of the students' interest and knowledge base in the modular teaching model is made. The results of various assessments are fed back to students and teachers to guide the follow-up learning plan. The sub-modules involved in the assessment include job statistics, self-test situation analysis, participation in BBS discussion statistics, Q&A analysis, resource browsing analysis, and classroom random detection analysis.

2.2. Functional design of the model

The modular innovation teaching model of university management accounting is not only a lecturer or problem generator, but a teaching model with inductive ability like a human teacher. It should provide a personalized teaching model that uses different teaching strategies depending on the characteristics of each student and the completion of their tasks. In this model, students actively deal with the model, and students' interests and misunderstandings drive the development of the teaching process. Therefore, the function of the modularized innovative teaching model of management accounting is to provide such a lively environment to achieve the best results in the teaching process.

The model consists mainly of three types of users: administrators, students, and teachers. Since many operations of administrators, teachers, and students are interactive, some modules have many logical functions interleaved in the implementation of specific functions [11]. Therefore, it is necessary to clarify the functions of each user and build a successful communication platform for "teaching" and "learning" for teachers and students. The administrator mainly manages the user information and maintains the model information; the students mainly conduct personalized learning; The teacher is mainly responsible for the entry and maintenance of knowledge points and test questions, analyzing the students' learning and mining information, and providing students with corresponding teaching suggestions and teaching strategies. Figure 3 shows the user function diagram.
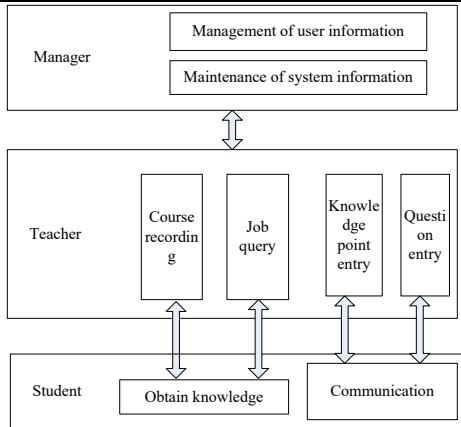
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Figure 3. User Function Chart

2.2.1. Administrator function

Administrator information management: functions such as adding, deleting, and updating the introduction information of sites, courses, courseware, and teachers; Administrator information maintenance: backup and recovery of various databases; user information management: user registration, establishment of users (student, teacher and administrator) files, user login authentication, account management, user rights settings and other functions [12]. Figure 4 shows the model management function structure diagram.
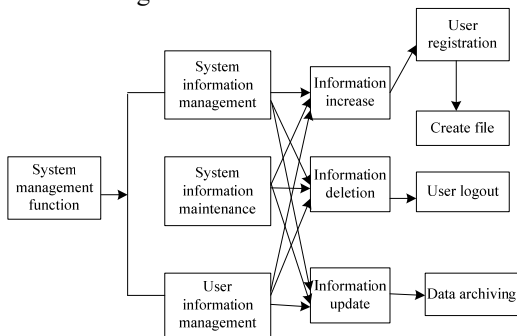

Figure 4. Model management function organization diagram

2.2.2. Teacher function

Resource management: courseware management (courseware production, courseware collection, evaluation, courseware update and supplement), material management (material production, material collection, evaluation, material update and supplement), test questions management (add, delete and modify test questions, test questions evaluation) and other functions; teaching analysis: teaching strategy analysis, cognitive ability analysis, current knowledge level analysis, test difficulty analysis and other functions [13]; Data mining: Teachers can use the data mining algorithm designed by the model to enable the module to mine and analyze the corresponding

information, so as to obtain the data basis that is beneficial to the improvement of teaching strategies and the adjustment of teaching progress. For example, after logging in the model, the student can provide the course content of the students with different difficulty levels by classifying the relevant dynamic attributes and static attributes of the students, or can be used to determine the knowledge level of the students.

2.2.3. Student learning function

Personalized learning: intelligent navigation, automatic generation of teaching content, courseware learning, pre-testing, learning tracking, content search, teaching material downloading, etc. Test: exam registration, exam review, test paper generation (smart group volume or adaptive group volume), automatic score of test paper or manual score of teachers, fill in user's test history, score review and other functions [14]; Review: examination history analysis, review content generation, review history generation and other functions; Q & A: mail management, questioning, query, intelligent search, problem management and other functions [15].

3. Experimental Argumentation Analysis

In order to ensure the effectiveness of the modularized innovative teaching model of university management accounting based on application-oriented talents proposed in this paper, a demonstration is carried out. In order to ensure the rigor of the test, students from the first and second classes of the same grade were selected to conduct experiments, and the traditional college management accounting teaching method was used as an experimental demonstration. The experimental results are shown in Figure 5. Figure 1 is a comparative analysis of the 1st and 2nd grades.
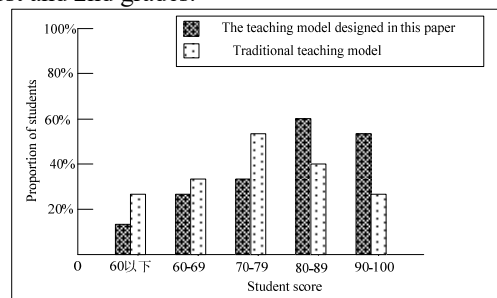

Figure 5. Comparison and analysis of 1st and 2nd grades

The teaching model used in the first class in the experiment is the modularized innovative teaching model of university management accounting based on the application-oriented talent training designed in this paper. The second class uses the traditional university management accounting teaching model. Through experiments, it can be found that the grades of students in class 1 are mainly between 80 and 100 points, while the scores of students

in class 2 are mainly between 70 and 89 points. And for students under 60, 17% for 1 class and 26% for 2 classes. It can be seen that the learning performance of the first class is significantly higher than the academic performance of the second class. That is to say, the teaching quality and teaching efficiency of the university management accounting modular innovation teaching model based on application-oriented talent training is higher than the traditional university management accounting teaching method. Through data analysis, it can be found that the management teaching efficiency of the innovative teaching model involved in this paper is 36% better than the traditional method.

4. Conclusion

Modular and innovative teaching is the current development trend of university management accounting teaching, and it is also the inevitable trend of China's education network and informationization. The research on the modular innovation teaching model of university management accounting under the network environment should be an important topic for the current and future. Based on the constructivist learning theory, this topic uses artificial intelligence technology, data mining technology and network technology as the technical background to provide students with an independent, intelligent and personalized learning environment that is conducive to the construction of students' meaning. It will effectively promote the continuous development and progress of modularized teaching and related disciplines in university management accounting, with profound theoretical and practical significance.

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