Teaching Team of Accounting Professional Training and Guidance Teachers for Multi-interactive Vocational Colleges Under the Background of Artificial Intelligence

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Abstract. This paper summarizes and analyzes the background of multiple interactive era under the background of artificial intelligence; the problems and weak links in the construction of accounting professional training teachers in higher vocational colleges. Based on the successful experience of the construction of vocational teachers at home and abroad, this paper explores the construction of accounting teachers in Higher Vocational Colleges under the background of artificial intelligence, and realizes the goal of "diversified interaction of teachers, diversified training structure, diversified training methods, alternation of work and study, and synchronous teaching and learning ability".

Keywords: Artificial intelligence · Multiple interaction · Accounting major · Instructor

1 Introduction

The accounting major of Higher Vocational Colleges trains high-quality applied talents facing the front line of accounting industry. The training of students' application ability and technical ability is mainly completed by the professional training instructor (hereinafter referred to as the training teacher's teaching). Practical teachers play an important role in Higher Vocational Colleges and play an important role in teaching.

According to the relevant regulations of the Ministry of education, non normal and non-medical colleges and universities should gradually standardize their school name suffixes as "Vocational and Technical College" or "Vocational College", while normal and medical colleges and universities should standardize their school name suffixes as "College" [1]. Higher vocational education includes two levels of academic education: undergraduate education and junior college education, while in other countries and regions, the higher vocational education system completely includes both undergraduate education and junior college education.

M. A. Jan and F. Khan (Eds.): BigIoT-EDU 2021, LNICST 392, pp. 623–632, 2021.
https://doi.org/10.1007/978-3-030-87903-7_75

2 Related Work at Home and Abroad

In the 21st century, higher vocational education is booming in China. CNKI and VIP have found that in recent years, there are more than 20 papers about the construction of professional training instructor team, and almost all of them come from higher vocational colleges, especially in the fields of engineering, automobile maintenance and mechanical processing. There is no special research on the construction of accounting practical training instructors in higher vocational colleges, Only in the research on the construction of professional training base, the problem of "double qualification structure" teaching staff is mentioned, which is not suitable for the urgent demand of our country's sustainable development of accounting industry for the cultivation of advanced application-oriented talents [2–4]. As the lifeline of school running, it is urgent for Higher Vocational Colleges to find the correct orientation and strengthen the construction in the increasingly fierce competition of accounting education.

3 The Teaching Function of Three Dimensional Integrated and Multiple Interactive Learning Platform

3.1 It has Online Learning Function

In the application of multiple interactive learning platform, teachers can make a short video of 35 min, which is sent to the class students through QR code scanning. The micro lesson video integrates the key points and key points of classroom teaching, and visualizes the classroom teaching content to students, so that students can watch and learn in fragmented time, and change the original boring and boring learning method. At the same time, the learning platform has the functions of exercise, lottery, interactive game or test [5]. Students can make targeted learning plans according to their own learning needs, and the learning platform will also receive students' learning feedback.

3.2 It has Intelligent Teaching Function

In the application of three-dimensional integrated and multiple interactive learning platform, teachers implement diversified hierarchical teaching methods according to the difficulty of teaching materials, guide students to form cooperative groups, and formulate corresponding teaching objectives and teaching plans for students at all levels, so as to determine the requirements of position and professional ability, and guide students to complete corresponding post tasks [6, 7]. As shown in Fig. 1. In order to master the accounting knowledge and skills. In addition, teachers can organize online teaching activities on the learning platform to strengthen the communication and cooperation between teachers and students, while teachers mainly guide students as consultants, tutors or evaluators to strengthen the dominant position of students.

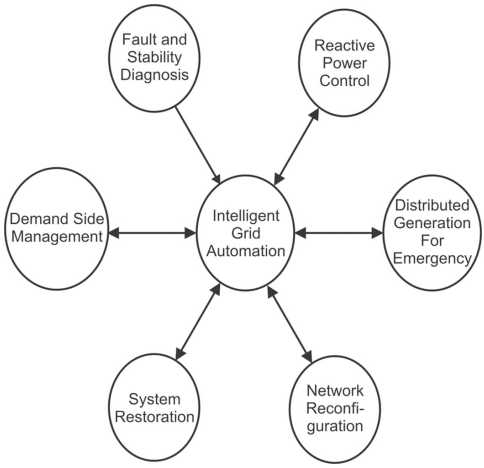

Fig. 1. Intelligent teaching function

3.3 It has the Function of Autonomous Learning

In the three-dimensional integration, multiple interactive learning, the effective integration of personalized learning and ability training, in the construction of student-centered learning system, cultivate students' habit of autonomous learning, so that students can discuss, ask questions, share in interactive learning, make learning break through the limitations of the classroom [8, 9]. Achieve the effect of learning anytime and anywhere.

4 Implementation and Construction of Teaching Mode of Three-Dimensional and Multiple Interactive Learning Platform Under the Background of Informatization

4.1 Design of Classroom Teaching Link

In the context of information technology, with the help of three-dimensional integrated, multi interactive learning platform, teachers can design the whole teaching process, play the role of 0 learning platform, and optimize the classroom teaching system. First, learning tasks. Before class, teachers should design learning tasks according to teaching content and teaching objectives, make theme accounting micro Lesson Videos, and upload learning task list and learning materials to the learning platform. The implementation of the principle of teaching students in accordance with their aptitude, the design of multi-level learning task list, different difficulties, so that all levels of students can complete the learning task, improve the students' sense of achievement, through the way of independent inquiry learning and understanding of accounting knowledge, to achieve the purpose of Preview, independent inquiry learning. Before class, students log into wechat group or QQ group to communicate with students and teachers online through mobile devices such as laptops, tablets and smart phones. Third, classroom interactive teaching [10–12]. In the class, teachers should change the original indoctrination teaching method, design multiple interactive tasks, help students consolidate

and internalize the key knowledge of this class, guide students to carry out the study of accounting tasks and key topics, cultivate students' habit of independent exploration and group cooperation, so that teachers and students can explore knowledge together and make progress together. Fourth, evaluation of learning effect. After class, teachers should design the content of after class test according to students' feedback. On the one hand, it is to consolidate students' learning content, on the other hand, it is to evaluate the learning effect, so as to understand the shortcomings of the current teaching system, so as to improve and optimize. In addition to the individual test task, the test content also includes group test task, which can give full play to the strength of the team, strengthen students' autonomous learning, and cultivate students' innovative thinking ability.

4.2 Classroom Teaching Process Design

Three dimensional integration, multiple interactive learning platform classroom teaching process. Before class, the teacher releases the self-study task list, guides the students to carry on the inquiry independent learning through the case design or the topic design, and carries on the repeated thinking with the question, strengthens the practice; in the class, the teacher plays the micro lesson video which has been made in advance, according to the difficulty of the teaching content, sets a_ The teaching content of level B, from simple to deep, is in line with the students' cognitive law, and the difficulty increases gradually from a to B. As shown in Fig. 2 after learning a, enter the advanced learning of level B, implement the principle of teaching students in accordance with their aptitude, and realize the students' personalized learning; after class, timely feedback the students' learning situation, so as to adjust the teaching system.

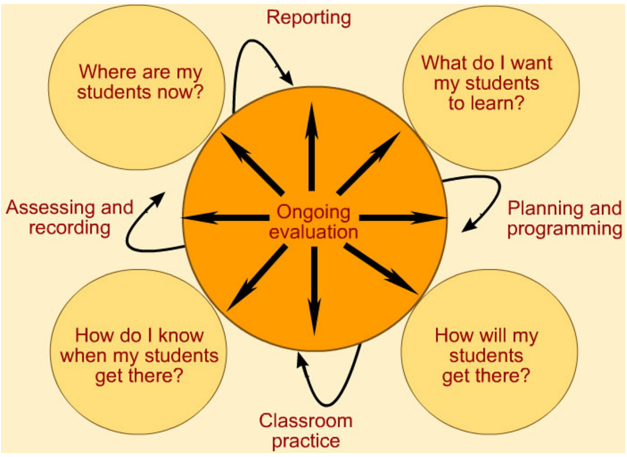

Fig. 2. Classroom teaching process design

4.3 Case Analysis

Taking intangible assets in financial accounting as an example, this paper selects umu learning platform software to design three interactive links before class [13]. One is to take the initial measurement of intangible assets as the main content, design questionnaire interactive activities to review the knowledge of last class; the other is to take the follow-up calculation of intangible assets as the main content, design exam interactive activities to investigate the key and difficult points of this class, The third is to design interactive games, follow the principle of combining work and rest, fit the teaching content, and relieve students' learning pressure and tension. These interactive links mainly rely on the way of scanning the QR code. Students can read the QR code, log on to the platform, enter the game link and questionnaire link, stimulate their interest in learning and meet their learning needs [14–16]. In class, according to the interactive results and answers of students' questionnaires, they can find out the missing and make up for the missing, and grasp the digestion of old knowledge and new knowledge, The platform will automatically display students' achievements and time, students can carry out reinforcement learning according to their own situation. After class, students can understand their own autonomous learning achievements through the answer results, while teachers can adjust the teaching progress and brake the targeted learning strategies and learning plans through students' learning feedback.

5 Correlation Analysis of Management Accounting Indicators

The traditional method of analyzing the correlation coefficient of variables is used to analyze the correlation of the selected financial indicators. The calculation formula of the correlation coefficient is as follows:

$$r = \frac{\sum_{i=1}^{n} (x_i - x)(y_i - y)}{\sqrt{\left(\sum_{i=1}^{n} (x_i - x)^2 \sum_{i=1}^{n} (y_i - y)^2 \right)}} \tag{1}$$

Where: R is the correlation coefficient of the two variables, and X and y are the two variables. If R is equal to 1, it means that X and y are completely positive correlated; if R is equal to 0, it means that X and y are completely uncorrelated; if R is equal to $-1 \leq r \leq 1$, it means that X and y are completely negative correlated. In general, 1R "1, which means that there is a definite linear relationship between X and y.

6 Analysis on the Current Situation of the Construction of Accounting Training Teachers in Vocational Colleges

This paper summarizes and analyzes the existing problems and weak links in the construction of the current practical training teacher team of accounting major in higher vocational colleges, which can be summarized into five aspects. Firstly, many of the "double qualified" teachers in full-time teachers belong to "certificate type", and lack of

practice opportunities and practical ability; secondly, the current personnel management system of higher vocational college teachers still applies to the teachers of ordinary colleges and universities Third, according to the feedback of teaching evaluation of external teachers, although their operation ability is strong, their comprehensive teaching ability is still not as good as full-time teachers [17]. For a long time, the traditional inertia of attaching importance to theoretical teaching and neglecting practical teaching often makes practical teaching more laissez faire, lacking effective evaluation and supervision, and even becoming the scene and ornament of professional teaching; fifthly, at present, most of the new teachers in Colleges and universities require master's degree, and lack of practical experience in the industry, so they are generally not competent for the teaching of practical training courses.

7 Theory and Method of Multi Objective Robust Optimization Design

This chapter mainly describes the general situation of robust optimization and the basic process of robust optimization. In order to deal with the situation that the interaction between multi-objective responses is not fully considered in the process of robust optimization of compliant structural products, based on the reliability and robustness theory, the factor analysis optimization method considering the interaction between multi-objective responses is introduced, which provides the corresponding theoretical support for the following chapters.

7.1 Basic Theory of Robust Optimization Design

7.1.1 Basic Concepts of Robust Optimization Design

Robust design is also known as robust design because of its different English translation. Its purpose is to find the optimal parameter combination under different conditions by adjusting the size and level of technical parameters, so as to reduce the performance fluctuation of products when they leave the factory. The fluctuation degree of product specific quality characteristics will be reduced as much as possible after robust optimization design, so as to ensure that all performance indicators of the product in its life cycle can reach the design value [18–20]. This method comes from the new quality supervision technology created by the famous Japanese quality management expert Dr. Xuanyi Taguchi. This technology is not only the essence of modern enterprise design and production at the beginning of its establishment, but also famous for its high efficiency, science, objectivity and low cost.

7.1.2 Common Robust Optimization Design Methods

(1) Taguchi robust design method this method mainly carries out robust optimization design in the form of experimental design, and analyzes the variance and mean value of the specific performance of the product, so that the mean value tends to be stable and the variance is reduced as much as possible, The purpose is to minimize the impact of external noise, temperature, corrosion and other factors on

product performance, as well as changes in internal structure, natural frequency and vibration mode, resulting in large fluctuations in product quality characteristics, so as to improve the robustness of the product [21]. Taguchi method usually uses SNR formula and orthogonal test to test and process data and results. Dr. Taguchi Xuanyi proposed more than 70 SNR formulas under different conditions. According to the different properties of each product quality response objective function, it can be divided into three types.

(2) Response surface method
The response surface method can express the function relationship by graphic technology, so that we can choose the optimal parameter combination by intuitive observation. The construction of such response surface needs a lot of data to test the experimental model, and modeling is a very important part. Constructing response surface model can intuitively get the functional relationship between the main parameters and the corresponding response variables, and the linear combination of the parameters and the response variables can be obtained through computer calculation of the functional relationship. This method has been used in many researches since it was proposed, and has been used in electrical engineering, mathematical equations, biochemistry and other aspects for many times.

7.2 A New Method of Optimization Design

7.2.1 The Necessity of Considering the Interaction Between Response Objectives in Multi Response Optimization Design

The main reason for the existence of the interaction between multiple response objectives is that the design parameters of the product seldom consider this influence in the design stage, which makes the product not fully play its performance and leads to a high rate of product return. RSM does not fully consider the interaction of multiple response objectives, which leads to the research results not fully in line with the reality. As a result, the interaction between some response objectives based on equipment quality characteristics is ignored in the design stage, which leads to product quality problems, even in the production stage, use stage and customer feedback stage, there are some product quality problems, such as high rate of inferior products, customer complaints, product recall and redesign [22]. For example, the recall of hundreds of thousands of Japanese Toyota vehicles has also had a negative impact on its market reputation and brand influence. Therefore, the interaction of response objectives in product multi response optimization is indispensable to improve product robustness.

7.2.2 A New Method of Multi Response Optimization Design is Proposed - Factor Analysis Method

Based on the correlation matrix, factor analysis classifies many variables with complex relationships (including independent influence and interactive influence) into a small number of common factors. The name of "factor analysis" originated in 1931. It was first proposed by Thurstone in 1904. The famous statistician C Spearman published an article to complete the concept of this method. In his published article, he analyzed the scores

of six courses learned by students in a school, and studied the correlation coefficient, similarity degree and arrangement of these six courses, and obtained a model with only one common factor, which is interpreted as "general intelligence". This common factor has contribution to all six courses, and its contribution to different courses is different, Then Mr. Spielman further studied the common factor model. However, due to the complexity of this calculation model and the lack of effective calculation tools and methods at that time, he had to suspend the research. With the development of the times, Mr. Spearman's research has become history, but it has not been forgotten by mankind. The emergence of high-speed computer is convenient for the calculation of big data, making it more convenient.

8 Exploration and Innovation on the Construction of Accounting Training Teachers in Higher Vocational Colleges

The accounting major of Tourism College actively explores and innovates in the construction of training teachers, improves the double quality of full-time teachers through multiple channels, and strives to introduce excellent teachers with industry experience [23]. We will arrange teachers with insufficient experience in the industry to take temporary posts in the corresponding enterprises for training, investigation and study, introduce industry front-line managers or technical experts as part-time training teachers, pay attention to the improvement of their teaching ability, and constantly optimize the structure of professional training teachers, so as to form a full-time and part-time training teacher team with complementary school and enterprise.

8.1 System Guarantee

The system guarantee team has relatively stable high-quality practical training teachers, which can widely accept the industry's talents. From hotels, travel agencies, high-end business clubs, golf clubs and industry associations, middle and high-level management personnel and line craftsmen are employed as special teachers or visiting professors. The practical skills module in professional courses or full responsibility for vocational skills courses are comprehensively responsible for. The school has issued the "accounting senior" and other majors Policies and systems, such as the Interim Measures for the appointment and management of external teachers in the school, the detailed rules for the management of external teachers in the Department of accounting and sports leisure management, etc., clearly define the employment procedures of part-time teachers in enterprises, the rights and responsibilities of post qualification, the conversion standard of post and occupation grade and course remuneration, etc., so as to form a stable part-time teaching staff in enterprises, which plays a positive role.

8.2 Multiple Linkage

Establish a teaching quality assurance system for training teachers, strive to improve the teaching ability of external teachers and the practical ability of full-time teachers. In addition to the conventional teaching evaluation methods such as students' feedback,

supervision and listening, we also take full-time and part-time teachers' teaching observation and experience exchange meetings to hold ppt courseware making skills special lectures for external teachers, and provide technical services to the teachers and external teachers of the enterprise cooperate to learn from each other, and promote the improvement and improvement of the theoretical teaching level and the cultivation of teaching norms of part-time practical training instructors outside the school [24]. Through a series of effective measures such as platform construction, system guarantee training promotion, practice experience and ability evaluation, the teaching quality assurance system of accounting management training teachers in higher vocational colleges is constructed (see Fig. 3).

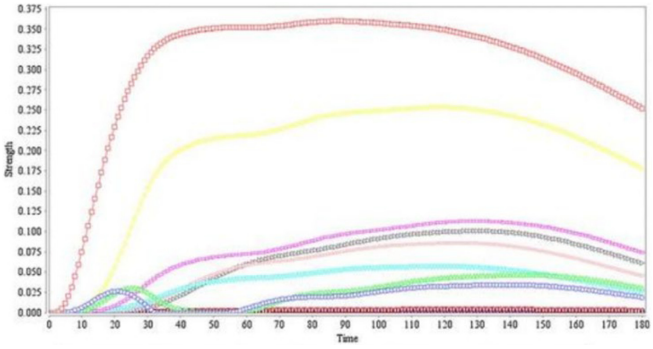

Fig. 3. Simulation of Multiple linkage

9 Conclusion

The construction of accounting teaching staff in higher vocational colleges is crucial to the development of Accounting Specialty in Ningxia. We must find out the problems existing in the construction of accounting teaching staff in each school. We should improve the talent introduction policy, construction planning and construction ideas, and according to the actual needs of the construction of accounting professional teaching staff in our school, it is necessary to expand the construction of accounting teaching staff in Ningxia higher vocational colleges, speed up the construction of accounting teachers with high quality and the combination of theory and practice, so as to better promote the accounting professional education in Ningxia higher vocational colleges.

Acknowledgements. This paper is the research result of the school level teaching reform research project of Shandong Xiehe University in 2020, "Research on the Construction of Instructing Team on Accounting Training in Vocational Colleges by means of Multivariable-Interactive Perspective" (2020gz06).

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