

Discussion on the Reform Model of Credit System in Higher Vocational Education Based on Bayesian Network

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Abstract: Higher vocational education is an important part of China's education system. He can deliver talents for the society. In the development of higher vocational education in China, the credit system is an important innovative measure, which effectively improves the quality of higher vocational education. However, in practical applications, the credit system of higher vocational colleges also has its own limitations, mainly because the degree of data mining is insufficient, resulting in the overall credit classification is not clear enough, which affects the credit system of higher vocational education to a certain extent Long-term development. Based on this, this paper explores the credit system reform model of higher vocational colleges based on Bayesian network based on Bayesian network, and hopes to provide some reference for the related research of credit system reform in higher vocational colleges.

1. Introduction

The Bayesian network is also called the reliability network. It is a directed acyclic model, which is often used in many aspects such as artificial intelligence, causal reasoning, and pattern recognition. The advantages of applying Bayesian networks are mainly as follows:

(1) Handling classification problems of related variables. When dealing with input variables of multiple correlations, because the relationship between variables is nonlinear, the use of supervised learning algorithms to deal with the problem of accuracy, many predictions have large deviations, and Bayesian networks can Good regression classification of input variables can effectively improve the accuracy of classification.

(2) Causal analysis of high accuracy. Bayesian network can effectively combine with other technologies when performing causal analysis, and the anti-interference ability is strong, so the accuracy of data analysis is high.

(3) Combination with prior knowledge. The Bayesian network can be effectively combined with a priori information, so it plays an important role in modeling. It can sum up the evacuated sample data and use arc to show the dependencies between data, so the a priori information The treatment can be organically combined with the sample, and the overall treatment is scientific.

(4) Avoid over-fitting of data. The Bayesian network processes the data using a directed acyclic model, and the overall processing method is more scientific, which can effectively avoid over-fitting of data processing.

Because Bayesian network has great application advantages, he has penetrated in many fields. Currently, it is mainly used in fault diagnosis, expert system, data classification, planning and learning. Moreover, because Bayesian network can retrieve information and mine data based on probability causality, it has a wide range of applications in decision systems, handwriting recognition and speech recognition.

2. The Importance of Credit System in Higher Vocational Education

Higher vocational education plays an indispensable role in China's education system. It provides

great help for the cultivation of first-line high-quality applied talents. Therefore, in the continuous development and improvement of China's education system, a variety of innovative measures have been taken, and the credit system is one of them. The credit system is mainly based on students' electives. Teachers are more likely to guide and meet the needs of students' education. Therefore, students can choose the courses they like best and graduate when they meet the requirements.

The credit system originated in the United States, using the credits students have taken to measure the student's learning, and also uses credits to determine the student's degree. Moreover, the use of the credit system can effectively delay students' graduation or advance graduation, which is also of great help to improve the efficiency of education system. In the credit system, it can be roughly divided into theoretical courses, experimental courses, practical courses inside and outside the school, graduation design courses, etc. Each field has corresponding credit requirements, students can select courses within the prescribed scope, and then pass the test. After that, you can get the corresponding credits, and the entire credits will meet the requirements to graduate. At present, the main classifications and advantages of China's credit system are mainly reflected as follows:

(1) Folding complete credit system. The full credit system is the most commonly used credit system in China. He requires students to complete the required minimum credits before they can graduate. The credits include practical credits, elective credits and compulsory credits.

(2) The folding school year is a credit system. The folding credit year system not only has the relevant requirements for credits, but he also imposes certain restrictions on the school year, so he is more planning. In this mode, students have more flexibility in learning and can take courses as electives.

(3) The folding grade point is the credit system. The folding grade point credit system is that each student has a corresponding grade point and credits. Students must not only complete the corresponding credits, but also the corresponding grade points must meet the requirements of the college. Only in this way can they graduate smoothly.

(4) Folding additional credit system. Folding addition is a credit system. Students are required to complete the minimum credits in the prescribed plan, and the corresponding additional credits must also meet the requirements. The additional credits refer to the students' participation in innovation, entrepreneurship, social activities and competition. Results.

The use of the folding credit system makes the learning plan more flexible. Students can choose and arrange the course according to their own interests. This not only enhances the teacher's competitive consciousness, but also facilitates individualized talent training. Of course, the advantages of the folding credit system are also reflected in the problem of paying the poor students. Since students can determine the graduation according to the credits, students can use hard study to shorten the time of school, so the cost of higher vocational education will be different. As the degree declines, some students can also take the form of part-time work and half-reading during school hours, and use the method of extending the graduation period to reduce the burden. The use of a folding credit system is conducive to the integration of teaching resources and ease of employment pressure, because the students' graduation time has flexibility, so they will not flood into the society in large quantities, which can effectively alleviate the employment pressure, and the students choose their own courses. It can avoid the repetition of the course and effectively improve the utilization of teaching resources.

3. Credit System Reform Model of Higher Vocational Colleges Based on Bayesian Network

3.1 Improve Student Curriculum Reform with Student Credits

Under the traditional credit system model, there is no obvious connection between the student's credits and the teaching effect, so that the credit system is simply an evaluation of the student's learning effect. The Bayesian network can be used to collect and describe data, and effectively feedback the students' credits. This can provide strong support for the evaluation of the teaching effect of a certain course, and can establish the relationship between the credits and the teaching

effect. relationship. In practical applications, the student's grades can be used as the main variables in the construction of the teaching effect model, and then based on the characteristics of the data to identify and judge the effect of a course in the actual teaching, so that the comparison can effectively find between the courses. The difference in teaching effects makes it easier to inform the institutions of the subsequent reforms.

Compared with other higher education institutions, higher vocational colleges pay more attention to the practicality of teaching. The main goal is to train first-line talents, so it is necessary to pay attention to teaching effects. By using Bayesian network, students' credit characteristics can be effectively identified, and the teaching effect can be judged through data mining, so that the teaching effect can be more detailed. When the teaching effect is judged, it can be adjusted from the aspects of teachers, teaching methods, teaching content, etc., which has positive significance for improving teaching quality and satisfying students' individualized needs.

In the traditional credit system model, the student's credits are simply output as a result and do not give meaning to others. However, the current teaching effect feedback is inextricably linked with credits. Therefore, in the credit system reform of higher vocational colleges, it is necessary to establish a credit feedback mechanism to examine the quality of teaching from the credits of students, so that the credits become the inspectors. The important criteria make the credit system contain more content, and at the same time, it can also reform the teaching mode from the teaching effect, which has positive significance for improving the teaching quality of higher vocational education.

3.2 More Detailed Credit Classification

Under the credit system model, students can get the corresponding credits as long as they pass the standard line. However, this does not describe the student's learning effect in detail, so it cannot be effectively distinguished. For this, Bayesian networks can be used for optimization. Students can use their scores as a data feature after each exam. When giving credits judgments, give more data to describe, for example, whether the grades are excellent. As mentioned in the above analysis, Bayesian networks have great applications in data classification, which can avoid interference from unrelated factors, and the accuracy of data evaluation is high, so it can be utilized after the introduction of Bayesian networks. The algorithm performs more detailed credit classification. The students' grades are used as the original input data. After the Bayesian network algorithm, the overall weighted data evaluation can be given, which can effectively distinguish the students. The learning effect can provide data support for subsequent evaluation of awards.

The development of school curriculum has different emphasis. Some professional practice courses and theoretical courses are obviously different from other courses. He has a crucial influence on the development and employment of students. Therefore, it is necessary to pay attention to the core curriculum when conducting teaching evaluation. Heavier. Under the traditional credit system, there is not much emphasis on the core curriculum status, so the evaluation of the overall teaching effect and personal ability of the students is not enough. Therefore, the Bayesian network can be used for detailed classification and core courses. The weighting is further improved, so that the characteristics of the learning effect can be better reflected when the student achievement is summarized. At the same time, the use of Bayesian network can also achieve multi-mode evaluation, evaluate students' learning effects and individual abilities from different aspects, can effectively optimize the teaching evaluation system, and make higher vocational education more personalized and humanized.

3.3 Optimization of Teaching Management

The Bayesian network can be used to deeply mine the data characteristics of student credits, so it is also beneficial to the optimization of school management. For example, for a certain student, the characteristics of student credits will be inextricably linked with the employment situation. Schools can establish a mapping relationship between the two through Bayesian networks, and then judge the credit characteristics according to employment conditions. Management optimization can be carried out in subsequent teaching. In practical applications, when judging the content of a subject becoming the focus of the employer, it is necessary to strengthen the improvement of the subject. On the one

hand, starting from the teaching management, the teaching content is filled in multiple directions, and at the same time, the evaluation system of the effect is established. On the other hand, it is necessary to closely combine the theory and practice of the discipline and to develop the ability of students in a targeted manner, so as to effectively improve the quality of teaching in higher vocational education.

Using Bayesian network to process data can reflect strong causality, so he can feedback the problems in the teaching system when dealing with the student's credit data, so the school's teaching management optimization also needs Bayesian The credit characteristics of network analysis are used as the basis. This can further refine the reform of the credit system, build a teaching management method through the data model to influence the teaching effect, and then judge the improvement measures of the follow-up teaching management. In this way, students' academic performance can be effectively linked with the improvement of the school's own management, and the teaching system can be built based on improving the quality of teaching and teaching effects. The optimization of teaching management based on the analysis of credit characteristics can make the teaching more targeted and directional, and at the same time, the actual teaching effect is continuously revised, which has positive significance for improving the teaching system of higher vocational education.

4. Conclusion

Higher vocational colleges need to pay attention to the practical effects of teaching and cultivate talents based on employment. Under the traditional credit system model, the division of teaching effects is not clear enough, and the characteristics of credits are not combined to improve the curriculum. Therefore, the actual application cannot meet the actual needs. Based on this, this paper first analyzes the advantages of Bayesian network application, and then explores the significance and classification of the credit system in higher vocational education. Finally, it explores the direction of the credit system reform based on the application advantages of Bayesian network. This paper explores the credit system reform model of higher vocational colleges based on Bayesian network, which is based on the improvement of curriculum credits, meticulous credit classification and optimization of teaching management. It is hoped that the credit system reform of higher vocational education in China can be given. Provide a certain direction.

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