The Selection Principle of Typical Production Cases of Modern Apprenticeship

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Abstract. One of the priorities of the modern apprenticeship system promoted by the Ministry of Education of China is to absorb typical production cases in time. The principle of selecting typical production cases plays an important role. With the help of the Hall of Meta-synthesis, the selection principle system of typical production cases of modern apprenticeship system is established, including the principles of typicality, production practice, objective authenticity, relative integrity, timeliness, practicality, interest, comprehensiveness, student subjectivity, process dynamics, result diversity, inspiration and application skills. The results prove the effectiveness of the method and provide a basis for evaluation and selection of typical production cases of modern apprenticeship.

1 Introduction

After several years of pilot work, in may 2019, the general office of the Ministry of education issued a notice on comprehensively promoting the work of modern apprenticeship [1], informing the relevant work objectives and requirements of "summarizing the pilot experience of modern apprenticeship and comprehensively promoting modern apprenticeship". Its goal is to take Xi Jinping's new era of socialism with Chinese characteristics as a guide, fully implement the party's education policy, implement the fundamental task of cultivating people through moral education, deepen the integration of industry and education, school-enterprise cooperation, improve the education mechanism of combining morality with technology, combining work with study, and the quality evaluation mechanism of multi-party participation, further promote the reform of teachers, teaching materials and teaching methods, summarize the successful experiences and typical cases of modern apprenticeship pilot projects, and comprehensively promote the modern apprenticeship system with Chinese characteristics with government guidance, industry participation, social support, enterprise and vocational school education in major national strategies and regional pillar industries and other related specialties. One of its work priorities is "to absorb new technologies, new processes, new specifications and typical production cases in a timely manner, and to form a co-construction and sharing teaching resource system". The "typical production case", as the core carrier of case teaching, plays an important role in practical teaching.

In 1910, Harvard Business School in the United States was the first to use case teaching, which pioneered case teaching and trained a large number of outstanding business leaders for the society. As a result, case teaching has become a successful education model that is popular all over the world and is considered to represent the future direction of education. Case teaching is practical and can effectively stimulate students' interest in learning, improve students' ability to analyze and solve problems, improve students' practical operation skills, and improve teachers' comprehensive ability and overall level [2]. The principle of case selection should generally have objective authenticity, practicability and comprehensiveness [3]. It should also be targeted, timely and interesting [4]. As well as the principles of case application, application minimization, knowledge integration and application skills. The aim is to achieve the best teaching effect in the shortest time [5].

In the teaching of modern apprenticeship, "typical production cases" play a more important role. How to choose carefully among the existing cases and how to dig out excellent teaching cases that keep pace with the times in production practice need a set of perfect selection principle system.
Because the modern apprenticeship teaching is of great significance, the selection principle for "typical production cases" needs to be more rigorous, comprehensive and easy to implement. Only by relying on the collective wisdom of relevant expert groups and scientific procedures can the ideal selection principle be obtained. On the other hand, Hall for Work Shop of Meta-Synthetic Enginninger, or HWSME, is the system of Hall for Meta-Synthetic Workshop [6]. It is based on Qian Xuesen, Dai Ruwei and Yu Jingyuan who have summed up the successful experiences of seminar, c3/I3, combat simulation, information and information technology, artificial intelligence, man-machine integrated intelligent system, system science and so on, which have been discussed in the world for decades, and introduced social thinking, collective thinking and knowledge engineering into system science to solve the problems of complex open giant systems with integrated methods. With the help of HWSME and fuzzy comprehensive evaluation method, it has achieved good results in the evaluation of abnormal fluctuations in stock prices [7]. A large number of practices have also proved that the comprehensive integration method is also feasible for many open complex giant systems [8]. This method can also be used in evaluation and selection principles. For this reason, according to HWSME, experts, professors and practitioners from relevant industries have been organized, expert groups have been set up, the selection principle of "typical production cases" has been determined, and an effective set of selection principles of "typical production cases" has been found, which is of great significance for promoting the teaching and training of modern apprenticeship system.

2 HWSME

HWSME process. In HWSME, the Internet provides experts with some representative opinions about the world wide web participants on a certain topic, and is a special problem-based expert in HWSME. Special problem-based experts and expert groups in the Internet constitute a generalized expert group in HWSME. Interaction is the only way to give full play to the overall advantages and emerge the wisdom of the group. The Hall of Workshop for Meta-synthesis generates and emerges group wisdom, which can be applied to solve complex problems. The final conclusion of the discussion on the problem in the hall of comprehensive discussion system can be obtained through both manual induction and link structure analysis, especially when the logical relationship is complex and it is difficult to use manual method, link structure analysis method shows its superiority [6]. Expert selection. Expert groups are an important part of the seminar hall system. They play an important role in proposing, discussing, modeling and finally making decisions to solve problems. Therefore, the selection criteria for experts are formulated from six aspects: high professional knowledge; Rich practical experience; The urgent need for innovation; High interest and mission in pursuing truth; Active academic thinking and open mind. Although the selection principles of cases have commonness, each industry has its own particularity, and the individuality of the industry must be considered. Therefore, according to the characteristics of the modern apprenticeship system in the financial investment industry, we selected 21 senior securities and futures practitioners, securities and futures teaching personnel with rich experience in case teaching, system engineering experts, securities and futures business department managers, wind control managers, customer managers, industry analysts, futures customer service managers and so on to form a panel of experts. They all have more than 10 years of relevant working experience and have good theoretical and practical experience, which is suitable for forming the analysis and evaluation expert group we need. They were divided into several groups and focused their discussions on the basis of group discussions. In order to form effective interaction among expert groups, it is necessary to overcome interaction obstacles, establish and strengthen a common vision, and standardize the interaction process [9].

3 The Selection Principle of Typical Production Cases of Modern Apprenticeship

Object description. The modern apprenticeship system was proposed by the Ministry of
Education of the People's Republic of China in 2014 to deepen the integration of production and education, school-enterprise cooperation, further improve the school-enterprise cooperation education mechanism, and innovate the training mode of technical and skilled personnel [10]. Through in-depth cooperation between schools and enterprises, teachers and teachers jointly teach students a modern talent training mode focusing on skills training. More attention is paid to the inheritance of skills. School and enterprise jointly lead the training of talents. Standardized enterprise curriculum standards and assessment schemes are set up, which reflects the deep integration of school-enterprise cooperation. The "typical production case" is aimed at the modern apprenticeship system, and its selection principle is formulated under such a background. Zhou Jintao predicted the historic bottom of the stock market in 2019 [11]. As a newly excavated case, "Shanghai Stock Index 2019 Kangbo Forecast Test", experts combined the case to discuss the selection principle, and finally evaluated the case with the formulated principle. According to the characteristics of the securities and futures industry, the selection principle of "typical production cases" is established based on HWSME. The specific discussion process is as follows: ZH represents the host and A, B, C, D, E, F ... represent different experts.

ZH: OK, let's start the discussion now. First of all, according to the characteristics of the securities and futures industry, combined with the "Shanghai Stock Index 2019 Kangbo Forecast Test", the main characteristics of "typical production cases" are analyzed so as to decide which principle system to use to describe them objectively.

A: "typical production case", of course, the first measure or principle is "typical" and "practical" principle, otherwise it would not be "typical production case"! Of course, we should evaluate a certain aspect or a certain principle separately, and then we can choose. As far as evaluation is concerned, it is the grade of good, medium and poor. According to the actual situation and psychological factors, it can be divided into 5 grades, good, good, general, poor and very poor. If it is to be quantified, it is a little troublesome and can be carried out by means of fuzzy comprehensive evaluation. The pros and cons of the cases should fully reflect the characteristics of the financial investment industry, and try to make use of some typical investment success or failure cases in the same industry for analysis and explanation, so as to enable the students to truly understand the deep meaning of "rules are stained with blood, and cannot be verified with blood again". For example, in 2018, almost all stock funds lost money because the Shanghai Stock Exchange Index has been empty, except for one, because its positions are empty. The case of "Shanghai Stock Index 2019 Kangbo Forecast Test" is to track, analyze and verify whether the Shanghai Stock Index really turned into a bull in 2019, which is a typical investment area forecast and also has a high degree of production practice.

B: (Agrees with A's view) practical principles is also very important. The selected cases must be combined with the actual work of the students. Through case teaching, it is really conducive to improving the practical operation skills of the students. The case of "Shanghai Stock Index 2019 Kangbo Forecast Test" can train students to deal with fundamentals or news, thus verifying it from the perspective of technical analysis and tracking the whole process of analysis and verification. It not only trains their patience and perseverance, but also grasps the analysis of market turning points, which is the core ability of investment.

C: the analysis of a and b is very reasonable! Interest is also very important, interest is the best teacher! In December 2018, Kang Bo predicted that as soon as WeChat articles came out, several students would ask: Is it true that people born after 1985 will have their first chance of wealth in 2019? Does the stock market really have a turning point in 2019? Show great interest! It provides a strong impetus for the follow-up continuous observation and verification! The principle of comprehensiveness is also very important. Cases with a certain degree of complexity should be selected to stimulate students to carry out in-depth and careful investigation, research, analysis and evaluation, so as to facilitate understanding and mastering of difficult and key issues and achieve better teaching results. The case of "Shanghai Stock Index 2019 Kangbo Forecast Test" is very comprehensive. To analyze whether there is a turning point in the market, it is necessary to
comprehensively analyze and apply a complete set of bottom region evaluation techniques including trend line, moving average, periodic resonance, golden section of falling range, turnover, bottom classification, bottom deviation, and downward exit center. The tracking starts from December 2018. After January 4, 2019, the bottom region of the market and the turning point of Xiong Niu are gradually and definitely predicted. Although the process is to be tracked at least until the end of 2019, the students have already had a great sense of achievement and the teaching effect is remarkable.

D: The analysis of A, B and C is in line with the actual situation. In addition, the case tracking process mentioned by C just now also embodies several important principles, namely, the principle of student subjectivity, process dynamics and diversity of results. Students should become the main body of case teaching and give full play to their subjective initiative. During the case tracking teaching process, the market situation is constantly changing. Before the final results come out, the results are diversified and can be up and down. This is the real market characteristics, probability and the opportunity to seek certainty in uncertainty. The "Shanghai Stock Index 2019 Kangbo Forecast Test" case fully conforms to these three principles.

E: Objective authenticity and relative integrity are also important. Cases must be real, not imaginary, in order to be of practical significance and to arouse students' interest in learning. The case should also be relatively complete, and can include at least one complete investment process or analysis and application of investment events, without losing its actual war character. The cases of "Shanghai Stock Index 2019 Kangbo Forecast Test" are obviously in good agreement.

F: E's analysis is correct. In addition, the enlightening principle and the skillful principle are also very important. The case should be obviously enlightening, drawing one example from another, and with the completion of the case teaching, the students can combine the method process of analyzing the problem into a completed skill combination. For the case of "Shanghai Stock Index 2019 Kangbo Forecast Test", it is very enlightening. After the above discussion, the host concluded that the selection principles of typical production cases of modern apprenticeship system based on HWSME include typicality principle, production practice principle, objective authenticity principle, relative integrity principle, timeliness principle, practical principles, interest principle, comprehensiveness principle, student subjectivity principle, process dynamics principle, result diversity principle, inspiration principle and application skill principle. Of course, this is all the first-class index principle, which is conducive to simplifying the use. If strict mathematical evaluation is required, an evaluation index system can be constructed based on this principle system, and the weight is calculated by weighted statistics method [7].

Determine the judgment set. According to the actual situation and psychological factors of futures account risks, we determine the set of evaluation results, and divide the evaluation results into five levels, from high to low: a, b, c, d, e, respectively, corresponding to "very good, good, general, poor, very poor." "Good" means the score is in the range of 0.8 to 1, and so on. According to the selection principle and the evaluation set, each case can be evaluated step by step and then comprehensively evaluated. The specific method is the same as that of "the evaluation method of abnormal fluctuation of stock price based on fuzzy mathematics" [3] [7] [8]. The so-called fuzzy comprehensive evaluation is a very effective multi-factor decision-making method to make a comprehensive evaluation of the things affected by various factors. The mathematical models adopted can be divided into one-level model and multi-level model. When there are many factors affecting something, people often use multi-level comprehensive evaluation methods such as two-level and three-level to solve it.

Case analysis. According to the principle of case selection, for the sake of simplicity, the above principles are all first-class indicators, and no second-class indicators are set. The principle equal weight and expert equal weight are adopted. The "Shanghai Stock Index 2019 Kangbo Forecast Test" cases are evaluated and scored one by one according to each principle, with the score range between 0 and 1 (including 0 and 1). The result is 0.95 and the grade is "very good", which shows that the case of "Shanghai Stock Index 2019 Kangbo Forecast Test" is an excellent typical production case, and the evaluation result is consistent with the actual situation.
4 Conclusion

The method comprehensively constructs the selection principle of typical production cases of modern apprenticeship system, and can judge the result according to the principle: "very good, good, general, poor, very poor", and can clearly find out the defects of the cases, facilitate evaluation and selection of cases, and provide intellectual support for evaluation and selection of typical production cases of modern apprenticeship system. This method is a simplified version of the evaluation method, which is efficient and concise, convenient to carry out case evaluation and selection work, and the effect is satisfactory. In order to further improve the precision and accuracy of evaluation, a two-level or even three-level principle system, or evaluation index system, can be constructed on this basis, and membership functions can be established. Weight importance can reflect the position and role of various factors as far as possible, and the weight is calculated by weighted statistics method [7]; The membership function should be able to objectively describe the characteristics of the evaluation object from different aspects. These problems must be solved by relying on experienced professional and educational experts and management experts, and by using the method of "comprehensive seminar hall system from qualitative to quantitative".

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