Cognitive Research on the Mode of "Integration of Production and Teaching" in Colleges and Universities Based on Artificial Intelligence

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Abstract. Artificial intelligence is the science of researching and developing the theory, method and technology application system of simulating, expanding and expanding human intelligence. It is of positive significance to apply it to the College of industry. With the deep integration of artificial intelligence and classroom teaching, artificial intelligence will present a series of development trends.

Keywords: Artificial intelligence · Integration of production and education · Five link mode

1 Introduction

With the expansion of the scale of colleges and universities, improving the quality of teaching has become a consensus. According to the needs of regional economic and social development, colleges and universities should set up application-oriented undergraduate majors in close connection with the needs of industry and industry. Application oriented universities should promote curriculum teaching reform under the background of integration of production and education, so as to meet the ever-changing talent needs of regional industries and enterprises. The integration of production and teaching can improve the skills and technology of students and enhance the comprehensive quality of students. It is the need of the school to improve the quality of personnel training, the development of industry and enterprises, and the need of students to enhance the value. Foreign colleges and universities have made exploration and Research on talent cultivation from different perspectives and perspectives, and formed their own talent training modes. For example, the University of Cincinnati "work study alternation" mode of American universities, the "entrepreneurial practice" mode of bayson business school, and the "industry university research training" mode of Stanford University [1]. In October 2016, the United States promulgated the national strategic plan for research and development of artificial intelligence, which defines strategies for state funded AI research and development. This is to cope with the general trend of vigorous development of artificial intelligence, focus on the long-term impact and change on society,

M. A. Jan and F. Khan (Eds.): BigIoT-EDU 2021, LNICST 391, pp. 33–42, 2021.
https://doi.org/10.1007/978-3-030-87900-6_5

and maintain the initiative and foresight of the U.S. government on the development of human intelligence (see Fig. 1). On July 8, 2017, the State Council of China promulgated the development plan for the new generation of artificial intelligence. The rapid development of artificial intelligence promotes the construction of an innovative country and a world science and technology power.

School running mode of "combination of production and education, integration of school and enterprise".

The school running mode of "combination of production and education and integration of school and enterprise" is a new development road opened up by vocational schools, but it is just at the beginning, and because of the different actual situation of each school and the different characteristics of each specialty, the specific methods are not the same. However, as long as we are firm in thinking, persist in exploration, seriously grasp the market information, and rely on the progress of science and technology, the development of vocational education will be able to embark on the road of healthy development tomorrow.

1.1 Advantage

It is conducive to stimulate students' creativity and innovation, and create conditions for students to combine work with study and work study.

Vocational schools set up professional industry and combine it with teaching, which provides students with necessary practice conditions and rare exercise opportunities. In the production practice and management practice, students will apply the learned book knowledge to practice under the guidance of teachers, so as to deepen the understanding of knowledge and enhance the ability of applying knowledge and solving practical problems. Not only that, the combination of production and education will also stimulate students' desire and enthusiasm for creation and innovation, and encourage them to continuously explore and innovate in practice. The cultivation of innovative consciousness, innovative ability and innovative talents is the direction of our vocational education. The school set up professional industry, let students participate in production or business, get a certain reward, which objectively also created conditions for students to work study combination, work study program.

It is helpful to improve the professional level of teachers.

Now, most of the teachers in vocational schools are directly allocated from colleges and universities, they have high professional level and rich theoretical knowledge, but the disadvantage is that their knowledge application ability is not strong, and their practical operation level is not high, which also greatly affects the improvement of the teaching quality of vocational schools. The establishment of practice base and the establishment of professional industry provide conditions and opportunities for the majority of teachers, especially the teachers of professional courses, to participate in practice and improve the ability of practical work. In practical work, teachers combine theoretical knowledge with production practice and teaching with scientific research, which is conducive to improving their professional quality and teaching quality, It is of great significance for vocational schools to establish an excellent teaching staff.

It is conducive to promoting the prosperity and development of local economy.

Vocational education is the most direct service for the local economic construction. It has a close relationship with the local economic construction and has a wide range of contacts. The specialties set up by vocational schools are closely related to the local economic construction. Because of their rich professional knowledge and flexible mind, they rely on science and technology to set up their own industries, so they have a certain degree of demonstration in the local area. At the same time, vocational schools have trained a large number of talents who understand technology and management. When they enter the society, they will inevitably become experts in this field, which is conducive to driving the adjustment of the local economic structure, Promote the prosperity and development of local economy.

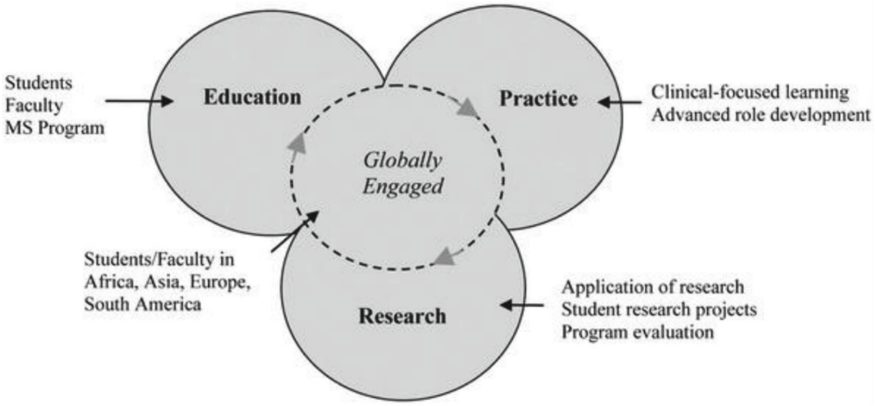

Fig. 1. Education integration

2 Artificial Intelligence

Artificial intelligence (AI) is the full name of artificial intelligence in English. In essence, it is a simulation of human consciousness and thinking, which is expected to think like human beings and even surpass human intelligence. At present, the development of new generation of artificial intelligence related disciplines, theoretical modeling, technological innovation, software and hardware upgrading, etc., is leading to chain breakthrough, and accelerating the leap from digitization, networking to intelligence in all fields of economy and society. After the deep combination of artificial intelligence and education, it will become the main force of classroom teaching, and it will also bring unprecedented challenges to education. At present, artificial intelligence is promoting the rapid development of education and teaching with the guidance of fairness, efficiency and personalization [2, 3].

3 Artificial Intelligence Control Algorithm

Feature identification is a process in which intelligent control processes the sampled information online according to the feature model, and pattern recognition determines

what kind of characteristic state the system is currently in. In the whole control process, the controller will receive a lot of information and record it to judge the control effect, determine the control strategy, correct the control parameters and affect the control output. However, the memory of the controller is limited and cannot be memorized completely. In fact, for control and decision-making, most of these information are redundant, and only some characteristic information needs to be memorized. Feature memory refers to the memory of intelligent control to some characteristic quantities which reflect the prophase decision-making and control effect, and the characteristic quantities reflecting the control task requirements and the nature of the controlled object. The set of characteristic memory is as follows:

$$\Lambda = \{\ \lambda_1, \lambda_2, \cdots, \lambda_p\}\ , \lambda_i \in \sum \tag{1}$$

Among them, the most commonly used feature memory is as follows:

λ_1 : e_{mi}——The i-th extremum of error;
λ_2 : u_H——The holding value of output in the early stage;
λ_3 : $e_{0i}^{\bullet}$——The first zero crossing rate of the error;
λ_4 : t_{em}——The interval time of error extreme value.

The advantages of feature memory are as follows:
(1) It can directly affect the output of control and correction and improve the control effect;
(2) It can be used as the basis of self-tuning, self-adaptive and self-learning;
(3) It can be used as the basis of system stability monitoring;
(4) The memory effect is high and occupies less memory units [4]. Human control strategy is flexible, not only the control strategy is different, but also the control mode of the same object under the same dynamic response state or different control requirements will be different.

The control (decision) mode set ψ is a set of quantitative or qualitative mapping relations F between the control output U and the output information E and the characteristic memory information Λ (collectively referred to as R), $\psi = \{\psi_1, \psi_1, \cdots\cdots, \psi_r\}$ where, $\psi_i : u_i = f_i\{e, \dot{e}, \lambda_i, \cdots\cdots\}$ or $\psi_i : f_i \rightarrow IF$ conditional THEN operations. According to the theory of intelligent control, this kind of control mode of changing strategy in intelligent control is called multi-mode control (decision-making). The process of identifying the characteristic motion state of the system through feature identification and taking corresponding control mode immediately can be regarded as an imitation of human heuristic and intuitive reasoning logic.

4 The Guarantee of Good Development of Artificial Intelligence in Colleges and Universities

4.1 Accurate Data

Data accuracy is very important for artificial intelligence. It is necessary to strictly avoid that the collected data can not accurately reflect the actual situation objectively or

there are subjective structural deviations in the process of data collection. In Colleges and universities, the data precision of massive knowledge base of artificial intelligence terminal is very important for knowledge transmission. For the acquisition of artificial intelligence big data and cloud data, it is necessary to strictly control the knowledge and content entered into the knowledge base accurately, which is the key link for the next knowledge diffusion.

4.2 Legal Policy Protection

The law should protect the intellectual property rights, privacy and data security. In the process of providing services, the collection and use of user knowledge, personal privacy and data shall follow the principles of legality, legitimacy and necessity. In the Vocational Colleges of colleges and universities, it is not allowed to collect and provide the human–computer interaction knowledge, students' learning privacy and examination data other than those necessary for the university industry, or use the personal information of students for purposes other than that of the university industry, or collect and use the personal information of students by deception, misleading or coercion.

4.3 Strengthening Moral Standards

With the advent of the era of artificial intelligence, there are many new moral problems, which is also a common challenge that all human beings need to face. It will be an inevitable behavior for the government to participate effectively and timely in the process of artificial intelligence values and ethics. Philip BA11, a British science writer, said that the moral issue of robots is an issue that human beings must pay attention to and need to continue to discuss [5–8]. In Vocational Colleges of colleges and universities, in order to answer questions with racial discrimination, politically sensitive topics and intentional offense, AI terminals should interact with each other under the screening of ethical procedures to respect and protect others.

5 Five Union Mode of Production Education Integration

5.1 The Goal of Talent Training Mode in Industry College of Colleges and Universities Based on the Integration of Production and Education

Combined with the advantages of university industry application-oriented specialty construction, We should work together with industries, industries and enterprises to formulate talent training programs, carry out professional colleges and universities, build industry teams, evaluate the quality of personnel training, build experimental, practical training and practice bases, etc. to form a "five alliance" talent training mode of industry education integration, and through the deep cooperation between the school and industry, industry and enterprise, we can achieve seamless cooperation Then, we should further improve the quality of personnel training, further enhance the ability of scientific research and social service of colleges and universities, and further improve the operation ability of enterprises, highlighting the win–win situation of universities, industries, industries, enterprises and students.

5.2 Innovation of "Five Links" Mode of Production and Education Integration

In the past, the school enterprise cooperation was too loose and the development was unsustainable. We should build a new type of school property, school bank and school enterprise relationship of "mutual trust, mutual assistance and mutual benefit", give full play to the role of all parties in personnel training, and emphasize the "five links" in the process of realization, namely, "school industry alliance", "school enterprise joint operation", "school enterprise linkage", "learning and application connection", "learning industry joint development" [9–12]. In view of the purpose of teaching reform, we should focus on the development of the training scheme under the "five union" talent training mode of University, industry, bank and enterprise, as well as the research on the matching mode, method and means of the university industry. It mainly includes (see Fig. 2):

(1) The "five links" mode is a powerful guarantee for schools, industries, industries and enterprises to jointly formulate training programs, jointly carry out university industry activities, and jointly obtain interests, so as to enhance the continuity and closeness of cooperation between universities, industries, banks and enterprises.
(2) Through the organic integration of industry resources in Colleges and universities, the "five link" mode has established a curriculum module that meets the needs of the society, and fully respects the students' interests and specialties, so that students' learning is more targeted and practical.
(3) "Five couplets" mode can improve the learning interest of undergraduate application-oriented students. By controlling the credit of theory course, increasing the credit of practice course appropriately, and adopting a variety of practice assessment methods, the comprehensive ability of students can be effectively improved, and for the students who attach importance to practice and neglect theory, it is conducive to improve their interest in learning.
(4) The "five link" mode promotes the full exchange and interaction among students, schools and enterprises. Students not only have stronger employment competitiveness for enterprises in the industry, but also have stronger competitiveness for related industries in the industry, so as to improve the employment competitiveness of undergraduate application-oriented talents.

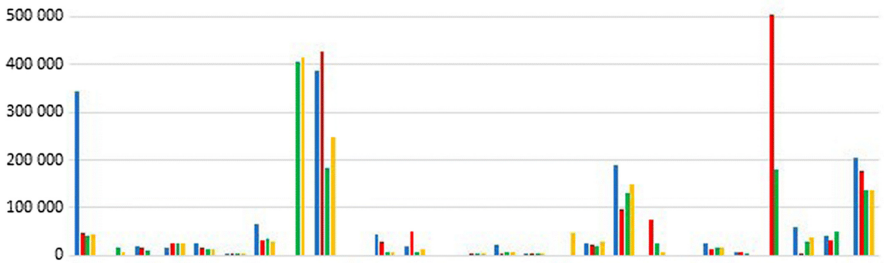

Fig. 2. Education integration effect

6 The Construction of "Integrated" Talent Training Mode Based on "Industry Education Integration, School Enterprise Cooperation"

6.1 "Integration of Industry and Education, School Enterprise Cooperation"

It aims to improve the quality of vocational talents training, solve the problem of the same direction between the supply of vocational education talents and the demand of industrial talents, realize the deep integration between the education and industry, and give play to the social responsibilities of enterprises. The mode of school enterprise cooperation is not only reflected in learning and employment, but also the cooperation between education chain and industry chain. Therefore, to build a more effective integrated talent training mode, we need the participation of "government, industry, enterprise, school and students", as shown in Fig. 3.

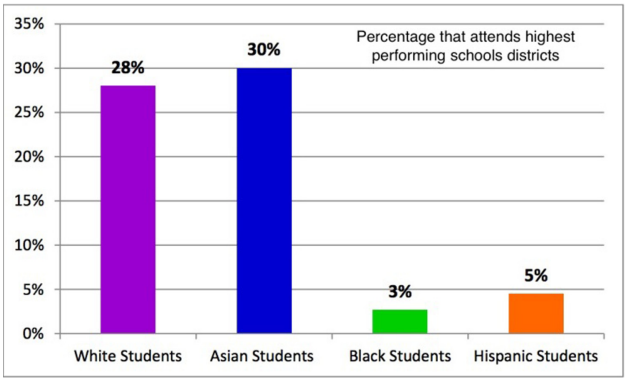

Fig. 3. Integration of industry and education

The government can participate in the personnel training of higher vocational education by publishing education planning topics and formulating relevant industry standards; the content of enterprises' participation in higher vocational education involves teaching resources, teaching staff, establishment of teaching units and training bases in the teaching process, learning to participate and practice, or using enterprise teaching and training platform and curriculum resources in the school; Industry associations can provide corresponding industry development trends for the development of higher vocational colleges, or industry experts can cooperate with higher vocational colleges in the form of part-time. Through the integration with enterprises in training team, teaching resource construction and operation, teachers and students can share enterprise projects, implement the industry specialization of school teachers, and truly realize the enterprise production of students' learning scene; Students can perceive e-commerce post cognition by visiting enterprises in person, accumulate social practical experience by practicing in e-commerce training bases inside and outside the school, and realize the integration of production and teaching.

6.2 Integration of Curriculum Construction

Through the "five party linkage of government, industry, enterprise, school and student", at the university level, through the analysis of national policies, education long-term planning policies, and the economic development status of the District, we can understand the development format of e-commerce industry; through sinking into e-commerce enterprises, we can obtain the setting of e-commerce posts and the requirements for e-commerce talents of leading enterprises, In order to make the curriculum construction plan of e-commerce specialty according to the actual demand, build various mutual aid platforms in accordance with the government, industry, enterprise, school and student resources, make the industry play the corresponding coordination function, and promote the in-depth and all-round integration of schools and enterprises.

The paper introduces the case of industry enterprise into classroom teaching, so that students can better grasp the application of curriculum knowledge in enterprise work [13]. Curriculum standards integrate professional skills standards. In the course of curriculum teaching, the learning objects are transferred from students to post employees. The curriculum objectives are transferred from knowledge mastery to job requirements of enterprises. The learning achievements of students will be transformed into the ability of enterprise posts. 13. The curriculum content integrates the vocational knowledge of post skills and makes the content post oriented and production process oriented, The knowledge goal and ability goal are transformed into the mark of the post by the enterprise production. The integration of the curriculum content provides the conditions and environment for setting up the enterprise personalized curriculum module and integrating the implementation of the curriculum into the post situation. Teachers design the teaching process in a similar environment to the work scene, which enables students to learn the relevant knowledge while solving problems in the close to the actual work situation, and construct a curriculum implementation mode composed of situation, project and task. The specific knowledge content is divided into tasks, tasks are integrated into the design projects, and projects are integrated into specific working situations. Classroom teaching does not only impart knowledge and skills to students, but also pay more attention to shaping their professional ability, and realize the organic combination of teaching process and production process.

6.3 Integration of Evaluation Standards

The evaluation after the implementation of teaching directly reflects the quality and effect of teaching and learning. How the evaluation standard directly reflects the curriculum objectives requires the integration of the evaluation standard, that is, the integration of student evaluation standard and industry evaluation standard, the integration of school teacher evaluation and enterprise expert evaluation, and the integration of academic examination and professional skill appraisal, as shown in Fig. 4. The student object is regarded as the evaluation standard of enterprise employee object. In this way, the students can better meet the requirements of the industry, meet the needs of the industry, realize the integration of curriculum evaluation, and record the whole process of students' curriculum learning in the form of students' curriculum portfolio, From the multi-dimensional perspective of knowledge mastery, technical skills shaping,

professional quality and enterprise post competency, the assessment standard should be quantified and visualized, and the assessment results should be supported [14, 15]. School teachers and enterprise technical experts participate in the assessment as multiple identities to form students' learning portraits, so as to reflect on teaching, promote the improvement of teaching quality, and provide high-quality resources for enterprise talent transportation.

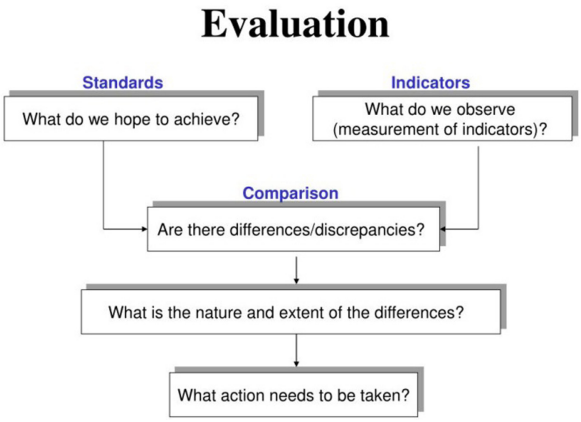

Fig. 4. Integration of evaluation standards

7 Conclusions

With the rapid development of artificial intelligence technology, financial robots are constantly updated. How to recognize the changes of the times, keep close to the pace of industrial development, assess the situation, speed up the transformation of higher vocational accounting information management professionals, and actively cultivate management accounting talents required by enterprise financial transformation, is an important proposition placed in front of each professional teacher. Only by further deepening the integration of production and education and strengthening school enterprise cooperation can the school successfully fulfill the historical mission entrusted by the times.

Acknowledgements. General topics of philosophy and Social Sciences Planning Office of Jiangsu Province in 2017: Research on the construction of Industry College of Application-oriented Universities under the background of industry education integration, Number: 17JYB007.

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