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Discussion on Talent Cultivation Strategies of Chinese Applied Universities in the Context of the Fourth Industrial Revolution

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Abstract

Changes in the demand for vocational skills in the labor market in the era of the fourth industrial revolution have determined that higher education should focus on exploring, cultivating and improving students' unique human qualities, optimizing the curriculum system around the element of technology, and optimizing the design of teaching and learning by using the educational empowerment of advanced technology, which are important trends. The educational empowerment of advanced technology is used to optimize the teaching design and other important tendencies. Looking to the future, in order to cope with the new challenges raised by the vocational demand in the labor market of the fourth industrial revolution and actively adapt to the new characteristics of higher education talent cultivation, universities of applied sciences need to actively build a system of talent cultivation goals that promotes the improvement of vocational competence and conversion power, and build a comprehensive curriculum system of disciplines that prominently improves the important quality of students' "people" and abilities, and build a comprehensive curriculum system of disciplines that prominently enhances students' "human" qualities. Applied universities need to actively build a system of talent cultivation goals that promotes vocational competence and conversion ability, a comprehensive curriculum system that prominently enhances students' important human qualities and abilities, a non-contact education space system supported by advanced technology that adapts to diversified teaching and learning, and an applied talent cultivation model characterized by deep integration of industry and education.

Keywords

Fourth industrial revolution; Applied universities; Talent development; Artificial intelligence; Soft skills.

1. Introduction

Introduction In 2016, the term "Fourth Industrial Revolution" was first coined at the World Economic Forum. According to Klaus Schwab, Founder and Executive Chairman of the Forum, humanity is currently at the beginning of the Fourth Industrial Revolution. The Fourth Industrial Revolution began at the turn of the century and builds on the digital revolution of the Third Industrial Revolution, but with deeper and more integrated digital technologies. Mobile devices have brought about global interconnectivity, and major advanced technologies such as artificial intelligence, robotics, the Internet of Things (IoT), 3D printing, nanotechnology, materials science, biotechnology, and quantum technology have spanned the three domains of the physical, the digital, and the biological, and are fusing with each other, giving rise to major transformations in all industries. This revolution is fundamentally different from the Third Industrial Revolution because of its unprecedented speed of development, the unprecedented changes it has brought to all fields of society and human beings, and the profound systemic changes it has triggered in the entire social system. In the field of higher education, the changing characteristics of the demand for vocational skills in the labor market in the context of the

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fourth industrial revolution have put forward new challenges and requirements for the cultivation of talents in universities. At present, China is seizing the opportunity of the fourth industrial revolution and vigorously building a system of training applied talents in higher education to serve industrial transformation and upgrading. It is of great significance to actively consider the talent cultivation strategy of applied universities in the era of the fourth industrial revolution at this new historical juncture.

2. Changes in Occupational Manpower Needs in The Era of The Fourth Industrial Revolution

In the history of human development, the first industrial revolution was driven by the steam engine, which realized the transformation from handmade workshop-style simple tool production to factory-based machine production; the second industrial revolution was driven by electric power, which realized large-scale machine production based on the assembly line; and the third industrial revolution was driven by the digital revolution based on computers and the Internet technology, which realized automated machine production. Each industrial revolution is a great liberation of human labor in production activities, and with the emergence of more advanced production tools, more and more tasks previously performed by human labor are completed by machines. In the era of the fourth industrial revolution, the development and application of advanced technologies such as artificial intelligence and robotics are accelerating this trend.

2.1. Artificial Intelligence's Artificial Replacement Impact on Traditional Occupational Jobs

KengSiau categorizes work tasks into structured and unstructured tasks, routine and non-routine tasks, structured tasks are tasks that can be clearly defined and described and can be broken down into smaller, more manageable tasks, unstructured tasks are tasks that rely on intuition, judgment, and experience, routine tasks are tasks that are regulated by a strong force or are unchanging and are completed within a specified cycle, and non-routine tasks are tasks that are performed occasionally, irregularly, or for the first time. Non-routine tasks are tasks that are performed occasionally, irregularly or for the first time. Of these, jobs involving routine, structured tasks are easily automated and will soon be replaced by AI. [2] Work on structured but non-routine tasks is not economically cost-effective to automate. Jobs with unstructured tasks, on the other hand, are difficult to perform by machines, such as psychiatrists and psychologists. It can be seen that among the various types of tasks, only those that rely mainly on the special abilities of "human beings" maintain their advantage over machines. In terms of the distribution of specific occupations, the Future of Jobs Report 2018 published by the World Economic Forum, which surveyed the top executives (mainly human resources executives) of 313 large-scale leading companies in 20 countries covering 12 major industry groups, shows that the jobs that will continue to see an increase in demand from 2018 to 2022 include three broad categories: (1) jobs that require a high level of human resources, (2) jobs that require a high level of human resources, (3) jobs that require a high level of human resources, and (4) jobs that require a high level of human resources. These are broadly divided into three categories: first, established, routine high tech talent, such as data analysts and scientists, software and application developers, and e-commerce and social media specialists; second, roles that utilize unique "people" skills, such as customer service, sales and marketing professionals, training and development, organizational development specialists, and innovation managers; and third, roles for people who need to work in a unique "people" environment, such as customer service, sales and marketing, training and development, organizational development specialists, and innovation managers. Third, there are a variety of new professional roles related to understanding and leveraging emerging technologies,

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including artificial intelligence and machine learning specialists, big data specialists, process automation specialists, information security analysts, user experience and human-machine interaction designers, robotics engineers, and blockchain specialists. The jobs that are increasingly in surplus are mainly routine middle-skill positions that are vulnerable to new technologies and process automation, such as data entry clerks, accountants and payroll clerks, secretaries, auditors, bank tellers and cashiers. It is clear that the human workforce of the future will be dominated by job roles that require a high degree of control and use of technology, a high degree of human initiative and knowledge, and that are difficult to replace by machine automation.

2.2. Human-specific vocational skills as a result of changes in occupational job requirements

In the face of changing occupational job requirements, the skills needed to perform most jobs will change significantly. Technology-related non-cognitive soft skills are becoming increasingly important, as they will remain beyond the scope of most artificial intelligence in the near future and will be critical for human excellence and relevance in the workplace of the future. Among these skills, the requirements for analytical thinking and innovation, active learning and learning strategies, creativity, ingenuity and initiative, critical thinking and analysis continue to increase, and the importance of skills such as technical design and programming, and analysis and evaluation of systems is growing, while the requirements for manual skills and physical competence, and skills related to financial and other resource management as well as basic basic installation and maintenance skills are declining. A 2019 Northeastern University and Gallup report, "Facing the Future: A Call for a Unified Skills Strategy for Citizens in the U.S., U.K., and Canada for the Artificial Intelligence Era," surveyed more than 10,000 adult citizens in the U.S., U.K., and Canada and human resources executives at 10 large companies, and found that 50%, 60%, and 60% of respondents in the U.S., U.K., and Canada, respectively, believe that compared to math Soft skills such as teamwork, communication, creativity and critical thinking are more important than hard skills such as math, science, programming, working with and manipulating data in determining whether a worker loses his or her job due to new technology, automation, robotics or artificial intelligence. [3]All HR executives indicate that their companies are looking for employees who possess both soft skills, such as the ability to work in teams, and hard skills. It is clear that in the future of work, in addition to soft skills, which are difficult for machines to learn and acquire, hard skills in creating, controlling and applying advanced technology will also be essential.

3. Challenges to Higher Education Personnel Training Due to Changes in The Demand for Personnel In The Era of The Fourth Industrial Revolution

Historically, all industrial revolutions have been accompanied by changes in the training of higher education personnel. In the United States, for example, after the first industrial revolution, higher education underwent a major curriculum reform, shifting from the classical liberal education advocated by the 1828 Yale Report to the implementation of the "new education", which is manifested in the establishment of diversified degree programs as well as new general education programs based on the elective system of the curriculum, to cultivate practical talents with a wide range of knowledge and a wide range of skills. The "new education" was characterized by the creation of diverse degree programs and new general education programs based on curricular electives to produce practical people with a wide range of knowledge. During the Second Industrial Revolution, the expansion of the type and number of universities and the democratization of higher education began, and the establishment of land-

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grant universities, facilitated by the Morrell Act of 1862, contributed to the rapid development of the field of technical education in agriculture and industry and provided opportunities for the children of workers and peasants to receive higher education. Influenced by the graduate education model of German universities, a number of research universities emerged in the United States. A number of private research universities and small colleges were established under the auspices of large private consortia in the railroad, oil, and steel industries. This series of changes produced many inventive and applied talents that helped to consolidate and accelerate economic and social development. During the Third Industrial Revolution, the changes in higher education were mainly reflected in the universalization of higher education and the use of digital teaching and learning technologies. The popularization of higher education has led to a greater diversity of student backgrounds. Online education, represented by the "first year of MOOCs" in 2012, has gained tremendous development. Online and technology-supported teaching has enabled universities to teach students from different backgrounds more effectively and to open up their resources to more teachers and students. Generally speaking, the economic and social demand for a large number of application-oriented talents brought about by the first two industrial revolutions has, on the one hand, pushed higher education to cultivate marketable talents through the reform of the talent cultivation system, and on the other hand, pushed the increase in the type and number of higher education institutions to recruit more ordinary people to receive education, thus enlarging the scale of talent cultivation. The Third Industrial Revolution, on the other hand, has pushed higher education to implement brand-new education and teaching changes through the introduction of digital technology, integrating high-quality education resources to meet students' needs for individualized learning and development, and promoting students' independent learning ability and level. Therefore, it is an urgent task for higher education to meet the demand for talents and skills in the labor market in the era of the fourth industrial revolution in a timely manner, so as to prepare students for the turbulence in the job market brought about by artificial intelligence, machine learning and automation.

3.1. The goal is to focus on the development of the student's unique "human" qualities.

The emerging high and new technologies in the fourth industrial revolution are reshaping the labor market. Although there is no clear answer as to whether the development of high and new technologies will replace more artificial occupations in the future or create more new artificial occupations, people's orientation towards the crucial occupational skill requirements of the future labor force is based on a common understanding that it is pointless to try to compete and confront between human beings and machines. It is pointless to try to compete and confront between humans and machines. In the workplace, there is a synergistic working relationship between the two, and there is no doubt that human work will only be work that highlights the unique strengths of the "human", and is led and accomplished by the human, where the value of what the human thinks of as a "human being" is highly emphasized. The value of "people" is highly manifested. For example, Joseph E. Aoun, President of Northeastern University in the United States, proposed the "Humanics" model to develop skills essential for the future and to teach students about the high-tech world around them. [4] "There are two main axes running through the Humanics model: new literacy and cognitive skills. New literacy consists of three main literacies: technical literacy for coding and engineering fundamentals, data literacy for understanding, interpreting, and applying Big Data, and human literacy for social contexts, leadership, teamwork, emotions, and the demands of social maturity and agility. Cognitive skills include, first, critical thinking, which is open to cumulative or divergent logic and maintains a balance between data and contingencies; second, systems thinking, which enables one to cross systematic disciplinary boundaries and provide solutions to problems based on a

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multidisciplinary perspective; third, entrepreneurship, in which employees bring added value to their companies through innovative thinking and development, which must be reinvented in an evolving market; and fourth, entrepreneurship, in which employees bring added value to their companies through innovative thinking and development, which must be reinvented in an evolving market. Thirdly, entrepreneurship, through innovative thinking and development, brings added value to the company, which must reinvent itself in a constantly evolving marketplace; and fourthly, cultural agility (intercultural competence), which requires empathy, discretion, insight into human nuances, and the ability to reach out to other cultures. The model's goal of talent training focuses on human mastery of technology and the emotional, dynamic and creative characteristics of human beings, rather than training students to become a highly programmed "physical machine", which is a powerful illustration of the talent skill needs of the Fourth Industrial Revolution.

3.2. Optimize the curriculum around the "technology" element in terms of content

The outstanding features of the new curriculum system are embodied in its liberal arts, humanities and interdisciplinary nature. First, high-end frontier technologies such as artificial intelligence, robotics, Internet of Things, 3D printing, nanotechnology, materials science, biotechnology, quantum technology, etc. are the core driving force of the Fourth Industrial Revolution, representing the highest level of scientific and technological knowledge today, and work in these fields will occupy a dominant position in the coming decades. This means that knowledge of the knowledge, functions, and impacts of these advanced technologies should be an integral part of what all students need to know and think about, not just those in STEM (science, technology, engineering, and math) fields. On the one hand, the impact of advanced technologies emerging from the Fourth Industrial Revolution on, for example, the economy and the environment, requires that higher education infuse curricula, especially in science and technology fields, with a humanistic approach to learning, so that students are able not only to understand each technology in detail, but also to analyze and anticipate in-depth the interconnected technological, environmental, and socio-political systems, and to prepare them to be able both to develop new applications and products and to explain the impacts of these technologies on society and to develop the capacity to understand the impacts of these technologies on society. The Fourth Industrial Revolution, on the other hand, requires people who not only understand each technology in detail, but also analyze in depth the interconnected technological, environmental and socio-political systems, and who are able to develop new applications and products, as well as to explain the impact of these technologies on society, and to use their knowledge to base the application of science and technology on the preservation of the sustainable development of societies and on ethical principles that not only contribute to the material prosperity of societies, but also to the improvement of their social and cultural fabric. On the other hand, the development of the critical soft skills required by the Fourth Industrial Revolution is often not the focus and specialty of STEM disciplines, but is more closely aligned with the focus of humanities disciplines. Therefore, the creation of high-quality humanities programs that are fundamental to the development of soft skills is an important direction for higher education curriculum development. Thirdly, the fourth industrial revolution is characterized by the blurring of the boundaries between physical, digital and biological fields brought about by the development of advanced technologies, and interdisciplinarity is the inherent support for the development of advanced technologies. In order to fully capitalize on the opportunities of the Fourth Industrial Revolution, higher education should focus not only on the training of knowledge-based technicians, but also on the development of innovative talents, in particular high-level scientists and technologists, who must be nurtured in an interdisciplinary environment. At the same time, the fourth industrial

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revolution will change the workplace from task-based to human-centered, and the integration of humans and machines will reduce the gap between humanities and social sciences as well as between science and technology, which will inevitably require more interdisciplinary teaching, research and innovation [5]. For the future, it is more important than ever to build interdisciplinary curricula, and having interdisciplinary qualities and competencies is essential for students to adapt to the more flexible and short-term work tasks of the future.

3.3. Teaching and learning to optimize instructional design using the educational empowerment of advanced technology

In recent years, with the rapid development of digital technology, smart cities, smart campuses, smart classrooms, and smart classrooms are fundamentally reconfiguring traditional education and teaching time and space, combining online and offline, interacting with the virtual and the real, coexisting with the asynchronous and the synchronous, and synergizing with the classroom and the outside classroom, which breaks down the limitations of time and spac e.1 Radcliffe proposed a Pedagogy-Space-Technology Framework for designing and evaluating the learning place. Radcliffe proposes a pedagogy-space-technology framework for designing and evaluating learning places. Pedagogy, space and technology interact with each other, with the choice of pedagogy affecting the organization of space, space affecting what actors can do in it, the style of teaching and learning, and the opportunities and constraints on the use of a given technology, and a given technology affecting how educators and learners utilize the learning space. It can be argued that high-level pedagogical design in the era of the Fourth Industrial Revolution seeks to integrate teaching, learning and technology as an inevitable and necessary pedagogical reform. The powerful educational capabilities of new technologies need to be tapped and introduced into the design of teaching and learning in higher education. At the same time, more and more breakthroughs in new technologies also provide a wide range of space and possibilities for the realization of more flexible and effective intelligent instructional design. [6] For example, Helmi Norman et al. have constructed a drone-based teaching-learning model by utilizing the various video shooting and monitoring technical features of ordinary civilian drones to maximize the educational empowerment potential of drones, and to make use of them in the implementation of appropriate learning theories and learning strategies. In structured physical learning spaces, drones can be used for outdoor laboratory classes and field investigations; in unstructured physical learning spaces, drones can be used to record group discussions in indoor and outdoor learning; and in virtual learning environments, drone-recorded videos can be shared in spaces such as MOOCs and social media [7]. In the future, technological means will no longer be a mere accessory or auxiliary presence in the teaching and learning process in higher education, but an important component of the educational process.

4. Applied University Talent Cultivation Strategies Based on New Talent Demand and Cultivation Concepts

According to Klaus Schwab, China is already a world leader in emerging technologies such as drones, solar energy and supercomputers in the fourth industrial revolution, which is putting the world on the path to intelligence, and looking to the future, China will be a leader in the fourth industrial revolution. At the same time, he points out that the new world of work that is emerging from this revolution holds enormous inherent opportunities for economic prosperity, social progress and personal development, the realization of which will depend on the reforms implemented by all relevant stakeholders in the education and training system, labor market policies, business approaches to skills development, employment arrangements and the established social contract [8]. The higher education system has an irreplaceable role in the cultivation and output of labor force, and how to respond to the challenge of labor market

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demand for talents is a major proposition for the development of higher education in China amidst the wave of the fourth industrial revolution. The core mission of applied universities is to cultivate applied technical and skillful talents and enhance students' employment and entrepreneurial ability, and this essential "vocational" schooling characteristic directly determines that schools should have a high degree of sensitivity and responsiveness to the changes in the new labor market. Based on the present and facing the future, applied universities need to review and optimize their talent cultivation strategies with new perspectives and forward-looking thinking.

4.1. Constructing a system of talent training objectives that is fundamental to the promotion of vocational competence and transferability.

In the era of the fourth industrial revolution, artificial intelligence technology has been applied to more and more work areas, and intelligent control of unmanned operations has demonstrated the precision and efficiency that is difficult for manual operations to achieve. In the future, with the increasing degree of "intelligence" of artificial intelligence, it is foreseeable that its impact on the labor market will be more extensive, and the speed of impact will be more rapid. Under this trend, first, the substitution of artificial intelligence will gradually lead to the demise of many traditional occupations, and those who are working will face unemployment, change jobs, and the competition for occupations will become more and more intense. Secondly, the changes in the whole social system brought about by the continuous emergence of high and new technologies will give rise to new occupations, but the new occupations are mainly those that can be performed by talents with high knowledge, skills, abilities and qualities, and the competition for the occupations will be equally fierce. Thirdly, the rapid "rise and fall" of occupations means that the possibility and reality of multiple career changes in the course of each individual's career is increasing. Fourthly, in between these changes in careers, the speed and intensity of innovation in society as a whole has increased, providing an immense space and stage for entrepreneurial activity. These new forms of the labor market, the demand for talents to support the innovation-driven transformation and upgrading of industrial structure, coupled with the employment demand of the huge number of college graduates every year, require that the orientation of the talent cultivation goals of applied universities must be based on the fundamental principle of enhancing the occupational competitiveness and conversion power of students. In the fourth industrial revolution, the meaning of "skill" will be redefined, that is, different from the traditional higher education or professional education, and the ability to have the corresponding ability combination in a certain occupation or professional field, but the ability to continuously adjust and learn new skills and new methods in different environments. As vocational competitiveness and transferability should be realized in the mastery of specific skills, applied universities should break through the narrow vision of the traditional education based on a single specialty, overly emphasizing on the cultivation of hard skills of specialized knowledge and technology, and overly emphasizing on the rate of professional matching for employment, and focus on the cultivation of professional and technical skills required by students to compete for immediate jobs, as well as consider the modern technical application skills of vocational generality and the skills and abilities required for students' future career development and transfer. In addition, we should also take into account students' future career development and transformation needs, such as the development of generalized modern technology application ability and the cultivation of students' soft skills in terms of superior and advanced work thinking, awareness, socialization, innovation and entrepreneurship, adaptation and self-directed learning and thinking, and so on. The fourth industrial revolution has forced more workers to shift from physical to mental labor, from routine to flexible work, from simple operation to diversified problem solving, etc., providing more convenient conditions for workers' self-development and self-worth

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realization. Applied universities' "soft and hard" skills training for students, combination of specialization and generalization, and balancing near and far, will help to improve students' comprehensive abilities and qualities, and lay a solid foundation for students to better realize their own value in their career.

4.2. Building a comprehensive curriculum system that emphasizes the enhancement of students' important "human" qualities and abilities

The demand for talents in the fourth industrial revolution is highly dependent on the basic technological literacy, high technology application, innovation ability and high "wisdom" soft skills of human beings, which requires that applied universities must grasp the dialectical relationship between hard technology training and soft skills training in the construction of the curriculum system. For students in non-engineering fields, we set up "basic technical literacy" courses to enable students to understand and examine the importance of the development and application of modern high technology from a multi-dimensional perspective, and the relationship between technology and the overall economic and social development, the development of the professional field and their own development, so that students can actively approach technology and use technology. This will enable students to actively approach and use technology. For students majoring in engineering and technology, it is necessary to train them to understand, master and apply technology from the perspective of humanity. Currently, the two major social challenges facing engineering education worldwide are employment and sustainable social development. In this regard, there are three strategies to change the engineering curriculum system in universities: add-on strategy, integration strategy and reconstruction strategy. The add-on strategy is to add new courses or learning activities, or to increase extracurricular activities, such as adding a new elective course on sustainable development. These strategies do not change the academic structure and culture of the school. Integration requires coordinating and analyzing specific courses in the existing curriculum and learning outcomes across disciplines in order to integrate related learning resources, for example, employment-related aspects such as project management skills, entrepreneurship, and the life cycle. It can be argued that the cultivation of highly technical innovators with a deep humanistic and scientific sensibility must rely on the penetration of both technical and non-technical disciplines, It can be said that the cultivation of highly technical and innovative talents with a deep sense of humanity and science must be supported by a curriculum system that integrates technical and non-technical subjects. The cultivation of soft skills is oriented to students of all majors, which depends on the advantageous role of a strong humanities curriculum system. The "pure soft disciplines" consisting of humanities and pure social sciences are holistic and qualitative in nature, and the teaching methods include more face-to-face classroom interactions as well as tutorials in the form of discussions and debates, which emphasize creativity of thinking and fluency of expression in students' learning. Therefore, for the traditional applied universities focusing on technical training, the construction of a holistic and comprehensive curriculum system is an important choice for the cultivation of high-quality vocational talents for the future.

4.3. Constructing a non-contact educational space system supported by advanced technology to adapt to diversified teaching and learning

In the era of the fourth industrial revolution, this space will become indispensable to the cultivation of talents in applied universities, and must be actively strengthened, expanded and fully utilized, so as to organically combine the advantages of technological means of educating people with those of teachers' face-to-face teaching, and to improve the quality of cultivating talents as a whole. First, non-contact educational space is a product of the combination of digital technology development and educational activities, and the existence of such space itself is a kind of vivid material and high-end platform for educating students in technological literacy,

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and the personal experience of participating in teaching and learning in the space will subconsciously guide and deepen students' cognition of modern technology itself and its impact. Secondly, non-contact educational space uses the Internet as a carrier, carrying and containing a huge amount of digital learning resources, which can be easily and conveniently searched and browsed at any time and any place by clicking on the URL links of the resources at the "fingertip". For specific knowledge points or learning topics, students can quickly access a much larger amount of information than the amount of knowledge stored in the brains of teachers. Thirdly, non-contact educational space is student-centered, based on students' learning and development needs, and enables students to shift from being "listeners" and "information receivers" in the traditional closed physical space to "thinkers" and "thinkers" who actively explore and participate in the open space. This enables students to shift from being "listeners" and "information receivers" in traditional closed physical spaces to being active explorers and "discoverers" in open spaces, which helps them to bring their learning initiative into full play and realize personalized learning. Fourthly, non-contact educational space shapes a highly democratic learning culture. Taking university MOOCs as an example, the backgrounds of the co-participants of a course are diversified, no matter whether they are teachers, students or interested members of the society, domestic or foreigners, they can all enter the course and become "classmates" to discuss and exchange ideas from different perspectives, expanding their horizons and enriching their learning experience. The learning experience will be enriched. These features play an important role in the cultivation of students' hard and soft skills. Looking to the future, applied universities need to strengthen the construction of this space in a planned and systematic way, and fully exploit its educational potential.

5. Prospect

Constructing an applied talent cultivation model characterized by the deep integration of industry and education

In the history of higher education development, every industrial revolution has become a key catalyst to promote the development of applied higher education, and the history of the development of applied higher education maps the history of industrial revolution. The industrial revolution based on major technological breakthroughs and innovations has brought about the continuous iteration of industrial forms and the corresponding changes in the demand for applied talents in industrial fields, which guides the development direction of applied higher education. Under the attraction and traction of the increasingly powerful magnetic force released by applied universities in the industrial field, the change of their talent cultivation mode has gradually experienced the social process of contact and cooperation with industries from shallow to deep under the law of "natural" selection of social organizations, from the cooperation between industry and education to the fusion of industry and education and then to the in-depth fusion of industry and education, and a kind of cooperation between talent cultivation and industries is being formed between applied universities and industries. From industry-teaching cooperation to industry-teaching integration to in-depth integration of industry and education, a symbiotic fusion of interests with blurred boundaries is being formed between talent cultivation and industry. In the era of the fourth industrial revolution and the post-fourth industrial revolution supported by more and more high-end and rapid technological changes, the high speed of upgrading industrial forms requires more and more and more and more core qualities of the applied talents, which objectively requires that the talent cultivation of applied universities must break through the traditional short-term, transactional order cooperation as the main feature of the instantaneous industry-education cooperation. It is objectively required that applied universities must break through the traditional short-term, transactional order cooperation as the main feature of immediate

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industry-teaching collaborative education mode, and realize more long-term industry-teaching in-depth fusion education mode based on the entity-based industry-teaching cooperation platform, so as to ensure that the mechanism guarantees the effective convergence of the relevant resources of all parties, to make clear the main responsibility of all parties, to bind the interests of the relevant parties firmly, and to provide a solid and powerful carrier for the practice of cooperation, and ultimately to form the embedded spiraling relationship of talent cultivation between the universities and the industrial entities. In the end, an embedded spiral relationship between universities and industrial entities is formed, so that both parties can sense the new talent demand in time and adjust and optimize the talent cultivation mode from the height of the community of development interests.

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