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ЧАКЫРЫК ЖАНА ЖОЛ: САНАРИП КЫТАЙДЫН КӨЗ КАРАШЫ БОЮНЧА  
КОЛЛЕДЖДЕРДЕ ЖАНА УНИВЕРСИТЕТТЕРДЕ ТАЛАНТТАРДЫ ДАЯРДОО РЕЖИМИ  
ЖӨНҮНДӨ

ВЫЗОВ И ПУТЬ: О СПОСОБАХ ОБУЧЕНИЯ ТАЛАНТОВ В КОЛЛЕДЖАХ И  
УНИВЕРСИТЕТАХ С ТОЧКИ ЗРЕНИЯ ЦИФРОВОГО КИТАЯ

**CHALLENGE AND PATH: ON THE TRAINING MODE OF TALENTS IN COLLEGES  
AND UNIVERSITIES FROM THE PERSPECTIVE OF DIGITAL CHINA**

**Кыскача мнөздөмө:** Санариптик Кытайдын курулушун тездетүү-бул элкөнүн жаңы өнүгүүсүнө ылайыкташуу, жаңы өнүгүү концепциясын толугу менен ишке ашыруу, маалыматташтыруу менен жаңы кинетикалык энергияны өстүрүү, жаңы кинетикалык энергия менен жаңы өнүгүүнү илгерилетүү жана жаңы өнүгүү менен жаңы даңк жаратуу. Колледждерде жана университеттерде санариптик таланттарды окутуунун азыркы абалын эске алганда, бул макала келечекте санариптик таланттарды окутуунун оптималдаштырылган жолун изилдейт. Санариптик таланттарды өстүрүү жолу университеттерге санариптик доордо санариптик кубаттуулукту куруунун муктаждыктарына ылайыкташуу үчүн методологиялык шилтеме берет жана санариптик университеттерде таланттардын сапаттуу өнүгүшүн илгерилетүү үчүн чоң мааниге ээ.

**Аннотация:** Ускорить построение цифрового Китая – значит адаптироваться к новым тенденциям развития страны, полностью реализовать новую концепцию развития, развивать новую кинетическую энергию с помощью информатизации, продвигать новое развитие с помощью новой кинетической энергии и создавать новый успех с помощью нового развития. Учитывая нынешнюю ситуацию с обучением цифровых талантов в колледжах и университетах, в данной статье рассматривается оптимальный путь обучения цифровым талантам в будущем. "Путь развития цифровых талантов" является методологическим руководством для университетов по адаптации к потребностям создания цифровой мощи в эпоху цифровых технологий и имеет большое значение для содействия качественному развитию талантов в цифровых университетах.

**Abstract:** To speed up the construction of digital China is to adapt to the new development of country, fully implement the new development concept, cultivate new kinetic energy with informationization, promote new development with new kinetic energy, and create new glory with new development. In view of the present situation of digital talent training in colleges and universities, this paper probes into the optimized path of digital talent training in the future. The path of cultivating digital talents provides a methodological reference for universities to adapt to the needs of building a digital power in the digital age, and is of great value to promoting the high-quality development of talents in digital universities.

**Негизги сөздөр:** Санариптик Кытай; таланттарды окутуу; санариптик сабаттуулук.

**Ключевые слова:** Цифровой Китай; подготовка талантов; цифровая грамотность.

**Keywords:** Digital China; talent training; digital literacy.

The Party's Report to the 20th CPC National Congress put forward that "we should focus on the real economy, promote new industrialization, and accelerate the construction of manufacturing power, quality power, aerospace power, transportation power, network power and digital China"<sup>[1]</sup>. Accelerating the construction of digital China will have a far-reaching impact on building a socialist modern country in an all-round way and promoting the great rejuvenation of the Chinese nation. In the process of digital China construction, the digital talent training mode is of great significance to meet the needs of national development in the new era and to solve the contradiction between talent supply and demand.

#### 1. Challenges of Digital Talents Training in Colleges and Universities

Compared with the new situation and new tasks, the talent training in colleges and universities in China still has many unsuitable places. The structural contradiction of the talent team is obvious, the precision of talent policy is not high, the "last mile" problem still exists in the reform of talent development system and mechanism, and the problems of talent evaluation only focusing on papers, professional titles, academic qualifications and awards are still outstanding, which are mainly reflected in the following aspects:

##### 1. The educational concept does not meet the requirements of the times in the construction of digital China

At present, China's higher education has the largest talent training capacity in the world, and it is no longer in a backward or following state in many fields, but is close to or reaches the international first-class level. However, the level, type and structure of personnel training can not meet the development needs of digital China. In particular, the characteristics of digital talent training need to be further focused and concise, the cultivation of students' comprehensive quality and practical ability needs to be further strengthened, the understanding of the strategic value of first-class talent training is not deep enough, the advantages of related disciplines are not fully exerted, and the innovation ability cannot meet the requirements of high-quality development. Under the new pattern of international and domestic double circulation promoting each other's development, higher education needs to be repositioned, personnel training needs structural reform, and the road of higher education reform and development with the characteristics of China's digital power is constantly explored.

With the steady progress of the construction of digital China, the exploration of new directions of higher education in China, such as integration of production and education, interdisciplinary, innovation and entrepreneurship, is getting deeper and deeper. There is a relative lack of professional research talents who master the research methods of digital China education and are familiar with the basic situation and laws of industrial practice, and their ability of strategic planning and layout is insufficient. At the same time, influenced by the orientation of scientific research assessment, teachers' main energy is concentrated in the field of professional research, and their ability to grasp systematically and globally is quite lacking. How to improve the talent training level of higher education and build a talent training system with China characteristics and in line with the reality of China is one of the bottlenecks to focus on world-class and improve the quality of higher education in China.

##### 2. The mechanism of school-enterprise cooperation in cultivating digital talents needs to be improved

The cooperation between schools and enterprises is not close enough, and the conditions for organizing collaborative innovation in Industry-University-Research are not sufficient. The incentive mechanism for the integration of innovation chain and industrial chain needs to be further improved, and the soft and hard environment for school-enterprise cooperation needs to be further optimized. On the other hand, in the teaching process of colleges and universities as the main body of running schools, in view of the needs of the construction of digital China, the participation of enterprises is relatively insufficient from the aspects of specialty setting, professional training scheme preparation to textbook compilation and course teaching, and the enthusiasm of enterprises in the aspects of talent training direction, professional ability and literacy is low, and the participation of core links is insufficient, and there is no full right to speak. On the other hand, although all colleges and universities have relevant requirements and management regulations for internship and practice. However, in practice, it is difficult to accurately connect between schools and

enterprises, the process management is not perfect, or the lack of process management observation indicators leads to the failure to reflect the actual situation, resulting in the supervision of off-campus internship and practice not being in place, and the quality of practical activities is uneven, especially for the top-level design of training high-end talents such as professional master's degree students and doctoral students.

3. The evaluation mechanism of digital talents training in colleges and universities is still not perfect

China's higher education has long been influenced by "four talents". At present, the mainstream evaluation system has not been able to effectively highlight the key elements such as characteristics, quality and contribution in evaluating the quality of digital talents training in colleges and universities. First of all, it is reflected in the subject evaluation index, which mainly shows that the current evaluation standard is more suitable for the cultivation of academic talents, and the evaluation content of digital talent education and engineering practice is less covered, which affects the investment and allocation of higher education resources to some extent. Secondly, the orientation of student evaluation needs to be improved. Digital professional certification requires the ability-oriented assessment of students in related majors. However, in practice, the evaluation still focuses on the assessment of students' academic ability, and the comprehensive ability related to engineering is difficult to be reflected in the assessment of school scenes. Finally, the systematic evaluation of teachers needs to be improved. The cultivation of digital talents is still a new thing. In terms of teachers' professional development, professional title promotion and task assessment, there is still a lack of institutional mechanisms conducive to their adaptation, which can not effectively motivate teachers to improve the practical level of digital China project and participate in the joint training between schools and enterprises, and a smooth, normalized and win-win talent exchange mechanism between schools and enterprises has not yet been established.

II The new path of digital talent training in colleges and universities

In February, 2023, the Overall Layout Plan for the Construction of Digital China proposed "to make overall arrangements for a number of disciplines and specialties in the digital field, and to cultivate innovative, applied and compound talents. Build a digital literacy and skills development and cultivation system covering the whole people and urban-rural integration"<sup>[2]</sup>. "Promote universities, research institutions and enterprises to participate in the construction of digital China and establish a number of digital China research bases"<sup>[3]</sup>. It can be seen that the cultivation of digital talents and the promotion of high-quality development of talents in colleges and universities through the construction of digital China are the obvious paths to help the development of digital Chinese modernization.

1. Optimize the concept of higher education

Digital power is related to the overall development of the country and is a strategic choice to grasp the new opportunities of the new round of scientific and technological revolution and industrial transformation. The core elements of developing a digital power are highly compatible with the disciplinary characteristics and advantages of universities. Facing the future development of information technology and information industry, colleges and universities adhere to the problem orientation, focus on the major needs in the process of national digital infrastructure construction, digital industrialization and industrial digitalization, and solve the technical problem of "sticking neck". Break through the existing barriers of disciplines and academic system and promote the cross-integration of disciplines. Reconstruct curriculum system and textbook system with interdisciplinary knowledge, broaden students' knowledge and vision, and guide teachers to update their knowledge structure. Strengthen basic theoretical research, strengthen the coordinated development and cross-integration between disciplines and majors, and realize the coordinated development of science, technology and humanities. Construct a training system for compound professional degree graduates, and train a large number of key talents who can not only innovate in technology but also understand industrial development and be competent for key positions in the digital industry in the future.

2. Reform various evaluation systems

The evaluation of teachers' teaching quality can be carried out around the achievement of training objectives, starting from teaching attitude, teaching methods, teaching content and teaching effect. Whether the teaching attitude is positive and correct, whether the teaching method is scientific, targeted and innovative, whether the teaching content is moderate in difficulty and detail, whether it is in line with the development of the industry, whether it is close to the frontier of science and whether the teaching process can arouse students' interest in learning, etc. should be counted and fed back in time. Teaching quality evaluation can be combined with online and offline evaluation methods. For the evaluation of offline teaching quality, a series of professional courses can be listed as key inspection courses when formulating detailed rules, and special sampling inspection should be made. Online evaluation is aimed at all students who participate in the study, and can be based on questionnaires to ensure full coverage of students. According to students' feedback, we should scientifically analyze the questionnaire results and quantify the

statistical results of each index to ensure teachers' improvement and innovation in the follow-up teaching process.

On the evaluation system of students' cultivation. The quality and effect of personnel training is the fundamental standard for testing teaching work, and the continuous improvement and promotion of curriculum construction and teaching effect is the direction of efforts. After the Ministry of Education clearly put forward the educational idea of "taking this as the foundation" and promoting the "Four Returns"<sup>[4]</sup>, students' learning situation is enough to reflect the development trend of higher education, and students' learning effect has always been the focus of attention in talent training. In the diagnosis and evaluation of students' learning effect, the effectiveness, accuracy and pertinence of the evaluation should be reflected. Taking students as the main body to evaluate fully embodies the purpose of "taking students as the center". Through online questionnaire survey, we can mainly listen to students' suggestions and opinions, and get their learning trends, learning experience and strong interest from the students' point of view, so as to sum up experience and broaden our thinking for establishing and improving the classroom teaching evaluation system.

### 3. Innovative curriculum training system

Break the traditional teaching methods, build a comprehensive and systematic teaching system for digital talents training, establish a constantly improving talent training program, integrate interdisciplinary courses into the curriculum, and fully realize the intercommunication between basic professional knowledge and the latest development of science and technology. There is no fixed teaching content for the course. By building a comprehensive innovative course system, students can fully understand the significance of the digital talent course by expanding and setting up practical activities according to the core content of talent training. Combining innovative courses with majors and strengthening teachers' strength On the premise of combining the educational characteristics of colleges and universities and strengthening the advantages of professional courses, innovative courses are integrated into various disciplines, and the curriculum content is reformed and innovated, and the training scheme for innovative talents is formulated. As a whole, the content of educational courses should include values, knowledge of principles, skills and behaviors. Digital technology, artificial intelligence, industrial internet and other technologies are integrated into the production and management process of various industries, and the requirements of knowledge system are becoming more and more diverse, which leads to the need to comprehensively consider the effectiveness of curriculum content, including its value to industry and society, its consistency with training objectives and its effect on students' training. Most of the basic courses have national syllabus or standards, while the professional foundation needs to be compatible and personalized according to the talent training objectives, training mode characteristics and curriculum system framework with the participation of enterprises and schools.

### 4. In-depth school-enterprise joint training

The key to resolving the structural contradiction between the supply side of digital talents and the demand side of talents is to implement curriculum teaching and the integration of production and education in the way of school-enterprise cooperation and diversified education, and it is also the fundamental way to improve the compliance of higher education to meet the social demand for digital talents. It plays an important role for industry enterprises to participate in curriculum system setting, curriculum content selection and curriculum teaching activities. Colleges and universities, enterprises and trade associations should establish long-term and stable cooperative relations and reach a consensus on what kind of talents to train and how to train them. Coordinate the resources of both schools and enterprises, deepen strategic cooperation, and thoroughly implement the "customized talent training"<sup>[5]</sup> guided by major difficulties and tackling key problems. In the aspects of enrollment, curriculum system and academic system design, and personnel training quality evaluation, the personalized personnel training mechanism discussed by universities and enterprises will be realized, and the "double tutorial system" between schools and enterprises will be implemented. In the established institutions, the new integration of school-enterprise cooperation in educating people is realized, the outstanding problem of the disconnection between talent training and production practice is solved in a targeted manner, the engineering scientific literacy, innovative thinking and practical ability of students are comprehensively improved, the growth potential of talents is stimulated, and the foundation of talent growth is consolidated.

### 5. Strengthen the training of practical links

Focusing on the latest direction and requirements of talent training in digital China, this paper explores new policies and mechanisms that are more in line with the requirements of industrial innovation and upgrading in the aspects of recruitment methods, the construction of double tutors, the academic system and student status management, talent training and quality evaluation of degree awarding. In particular, improve the evaluation mechanism of graduate students, increase the proportion of graduate students'

practical ability in evaluation results, strengthen process evaluation and phenotypic evaluation, and guide graduate students to develop their comprehensive ability to solve engineering problems. In view of the lack of engineering literacy and practical experience of teachers, the school optimizes the evaluation mechanism for teachers, takes engineering ability as one of the options for assessing teachers, and encourages teachers to develop their engineering ability through incentive mechanism. At the same time, open up channels for talent exchange between teachers and industry leaders, and help schools and various enterprises to build a win-win cooperation mechanism for teachers and talents. Enhance the ability of universities with digital characteristics to reserve high-level talents for key scientific and technological fields of the industry. Bringing the "first-class disciplines" of universities with digital characteristics into the coverage of the "Strong Foundation Plan" will provide more powerful policy support for the training of outstanding engineers with long academic system. Continue to promote classified evaluation and build a comprehensive evaluation system and resource allocation mechanism suitable for digital characteristic universities.

#### 7. Improving the Digital Literacy of Talents

College students are the main force to participate in digital work and digital innovation, and should have the necessary lifelong learning ability and adaptability in the digital age. According to the planning and guidance of "Action Program for Improving Digital Literacy and Skills for All", China needs to properly guide the education of college students according to the requirements of digital citizens, and integrate the cultivation of digital literacy and skills into the whole school education system in combination with the application scenarios of digital technology for college students such as professional study and employment preparation. School libraries, public libraries, cultural centers and other social education institutions should provide assistance for school education by providing digital basic equipment and digital literacy training resources, and strive to cultivate students' lifelong learning ability and digital adaptability to meet the needs of national strategy and the development of the times. At the same time, we should accelerate the interdisciplinary integration, reconstruct the curriculum system and teaching material system with interdisciplinary knowledge, broaden students' knowledge and horizons, promote teachers to update their knowledge structure, strengthen the research on mathematical basic theory of algorithm and model development, strengthen the coordinated development between digital information disciplines and other disciplines, and achieve a high degree of unity of technology and humanities<sup>[6]</sup>.

#### 8. Create a compound talent team

To realize digital innovation, develop digital economy and build a better digital life requires a large number of innovative, compound and technical high-end talents. Relevant education departments and institutions should focus on the requirements of national strategic development, economic construction, scientific and technological progress, people's lives, etc., and strive to create innovative and compound digital talent teams for some key majors. At the same time, it is necessary to lay out high-end talents around key digital technologies. Specific measures include but are not limited to: establishing new interdisciplinary majors, establishing relevant professional competitions and seminars, cooperating with national or regional industrial layout to carry out joint training, and implementing digital literacy and skills training projects with the participation of multiple subjects.

Based on the strategy of digital power, combined with the actual needs of university development and human training in the new era, aiming at the current shortage of talent training, this paper clarifies the training concept and perfects the training level in the top-level design, and puts forward a complete design scheme for talent training and growth path in the specific measures, which has important reference value for promoting the construction of digital talent training system in colleges and universities.

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