

Original Paper

Innovation and Originality in Talents Cultivation of Higher Education in the New Era

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Abstract

Innovation-driven development strategy and Originality cultivation are effective approaches to accelerate the national development strategy in the new era. In the trend of the development of the times, the new situation, new strategy and new march endow Originality with a deeper and broader connotation of the times. Innovation and Originality are supplementary to each other. Innovation reflects workers' continuous expansion and deepening of practice, and Originality determines how far this expansion and deepening can go. Talents strategy for powerful nation is the first strategy of building up a powerful nation. The cultivation of innovative talents in colleges and universities needs to integrate Originality into the whole process of cultivating innovative talents.

Keywords

new era, innovation, originality, connotation, integration, cultivation

1. Introduction

General Secretary Xi Jinping stressed in the report at 19th CPC National Congress: "After making long-term efforts, socialism with Chinese characteristics has entered into a new era, which is a new historical position for China's development". The report of 19th National Congress of the Communist Party of China (CPC) contains a strong connotation of innovation, which is highlighted as "innovation is the first driving force of guiding the development and the strategic support for building a modern economic system".

From the perspective of the emergence and development of new things, the "new" existing in human society and the "new" generated in technological progress are often obtained by exerting people's

subjective initiative. We should give full play to the subjective initiative of human beings in nature and human society and strive to seek “new”, realize “new” and apply “new”, which means innovation. The social environment of economic transformation and development has promoted the upsurge of innovation. In the domain of higher education, it is the historical mission of every university to cultivate a large number of top-notch innovative talents for the country and help build an innovative country. The reform practice in different types of colleges and universities proves that the cultivation of top innovative talents needs to attach importance not only to the knowledge level of students, but also to the cultivation of their innovative personality. Innovative personality includes passion for pursuing truth, rigorous and realistic attitude, perseverance, pioneering spirit and the consciousness of making contribution to human progress. Innovative personality is the product of dynamic integration and high development of human non-intelligence factors, and is the overall spiritual outlook of innovative talents. The requirement for innovative personality in the new era focuses on the shaping and promotion of originality. In terms of truly understanding innovation, practice innovation and doing a good job in cultivating innovative talents, we must think over another concept-originality.

2. One the Connotation Expansion of Originality in the New Era

When it comes to Originality, the first thing that comes to mind is “craftsman” or “artisan”. They have engaged in a certain field for a long time, seeking, grasping and applying the laws of things in practice, making continuous efforts to transform the world and inherit the spirit, and expanding the connotation of “Originality” in combination with the characteristics of scientific and technological development in different times. This kind of “spirit” is precisely the craftsmanship spirit strongly advocated by the country on the context of the new era. It is a kind of value pursuit and working attitude which pursue goodness, skillfulness and refinement. The connotation is no longer confined to the creation of handmade products, but has expanded into a synonym for pursuing excellence and perfection in every field.

2.1 The Originality of the New Era Has a Strong Consciousness of Innovation

The new era is an era of innovation. The Originality of the new era has not only the universal value such as the pursuit of goodness, originality and refinement, but also a strong consciousness of innovation. No matter whether it is a large organization or a relatively weak and excellent team, in an era of constantly updated knowledge, the elimination rate of technology is 20% every year and the life cycle is only 5 years. Innovation guided by knowledge will become the mainstream of social life. Bill Gates said that the world economy should solve the problem of “product quality” in the 1980s, the problem of “enterprise reengineering” should be solved in the 1990s and the problem of “innovation speed” should be solved in the 21st century. Innovative consciousness will be incorporated into the craftsmanship spirit, seeking new things learning, developing, using, creating new technologies, new ideas, new materials, new positioning, new modes, new applications and new schemes are the needs of the development of the new era and the needs of originality, evolution and development on the basis of

goodness, originality and refinement.

2.2 The Originality of the New Era Has Become Synonymous with the Pursuit of Excellence and Perfection in Various Industries

The originality of the new era is no longer limited to the creation of handmade products, but has entered into thousands of industries, becoming a synonym for pursuing excellence and perfection in every field. When it comes to “Germany manufacturing”, people will immediately think of professionalism and exquisiteness. Not only cars, but also machinery, chemical industry, electrical appliances, optical appliances, even kitchen appliances and sporting goods are the best quality products in the world. The manufacturers of “Made in Germany” are various kinds of German enterprises leading the trend of the times. From the influence of German products in the world and its development history, we can see that brand is the accumulation of spirit, originality and the pursuit of product specialty and perfection.

2.3 Originality in New Era Embodied in Team Work

Large industrial machinery production has brought about great changes in the production mode. In the new era, craftsmen, especially industrial workers, no longer produce through manual workshops. The work he undertakes is often only a small part of many processes. For example, on the “Fuxing” train, there are over 37,000 processes in a carriage, which cannot be completed by one person and must be completed by workshops or groups, namely, teams. What the team needs is “cooperation and collaboration” instead of fighting against each other. The craftsman in the new era cannot be separated from the team, and the originality of the new era needs to be embodied in the team.

2.4 The Originality of the New Era Calls for the Social Responsibility behind the professional spirit

The scale of modern industrial development is getting larger and larger, the degree of complexity is getting higher and higher, and more and more social elements are gathered, which will inevitably result in greater and greater risks caused by the operation of engineering systems. Future engineers not only need to have scientific theoretical knowledge and innovative practical ability representing the forefront of the times, but also need to have high ethical standards and professional ethics, be able to carefully face the risks that future projects may contain and strictly fulfill their social responsibilities.

3. Two Innovation Is Inseparable from Originality.

Innovation is a process in which new things create incremental value. New elements, value increment and realizability are the three elements of innovation. It is impossible to talk about innovation without new elements, while innovation with only new elements and no value increment can only be called creativity, and innovation that has not been realized in the end can only be called daydream or fantasy. It can be seen that effective practice is the foundation of innovation. Although there are many factors to promote effective practice, one of the most important factors is to cultivate originality and stick to originality.

First of all, originality contributes to the realization of innovation. Both theoretical innovation and

technological innovation are often presented through a specific product or activity. In the process of realization, many innovations can only remain at the conceptual level and become fantasies or fantasies without a pair of craftsman's hands, a craftsman's craftsmanship spirit.

Secondly, originality determines how deep innovation can be. Truly valuable discoveries, inventions and creations are groped out by "craftsmen" themselves who devote themselves to an industry, and strive for perfection in a skill. They are not only outstanding in their own fields, but also good at drawing on the strengths of many craftsmen and integrating them into their own work to make breakthroughs and achieve original results.

Third, originality determines how far innovation can go. Innovation includes not only new ideas, new theories, new concepts and new principles, but also new technologies, new processes, new works, new methods, etc. Every time a "craftsman" tirelessly revises new ideas and theories, strives for perfection in technology, perfects design and refines details, it is actually an innovation. Chinese consumers prefer to make purchases of daily necessities abroad, which shows that our products still have a big gap in function, quality, design and reliability compared with foreign high-quality products. There is still a long way to go from traditional industries to the lean manufacturing. It is obvious that originality will determine the length of the march to a great extent.

4. Three Innovation and Originality in Talents Training in Higher Education

The progress of human society has shifted from dependence on energy, resources and capital to dependence on knowledge since the 1960s. The quality of workers has increasingly become the core factor determining a country's comprehensive national strength and development potential. Innovation is determined by the essence of human practice, which reflects the continuous expansion and deepening of practice by laborers, while originality determines how far this expansion and deepening can go. Innovation and originality complement each other. Only the higher education idea that takes into account both is the education idea of sustainable development, and only the educational practice that takes into account both can the overall improvement of the quality of workers be realized.

4.1 Incorporating Originality into the Whole Process of Cultivating Innovative Talents

In terms of educational objectives, the importance of originality in the cultivation of innovative talents should be emphasized, the importance of originality in every teaching process should be highlighted, and the teachers need to deepen students' understanding of originality, and shape students' spiritual qualities of determination, innovation, endurance, perseverance, exploring spirit, win-win cooperation and excellence.

In order to implement the Outline of the National Medium-and Long-Term Program for Education Reform and Development (2010-2020) and the Outline of the National Medium-and Long-Term Program for Talent Training and Development (2010-2020), carry out the strategy of strengthening the country with talents, and build an innovative country, the Ministry of Education has successively established and implemented the programs for training top innovative talents aimed at promoting

higher education to train talents for the needs of the society, including the “Program for Training Outstanding Engineers”, “New Engineering Construction”, “Six Excellences—Top Talents Program 2.0” and “Engineering Accreditation Certification Based on OBE Concept”, etc. Colleges and universities have also launched educational and teaching reforms with their own characteristics. Each step has been carried out in an orderly way from the reconstruction of the school-running orientation to the condensation of characteristics, from the adjustment of subject structure to the construction of teaching system, from the optimization of curriculum setting to the construction of innovative practice platforms. However, these educational and teaching reform programs aiming at talent cultivation often focus only on students’ acquisition of subject knowledge and improvement of application ability, and there are no or few successful cases in which craftsmanship spirit is incorporated into talent cultivation objectives. In fact, the so-called “easy to learn skills but difficult to grasp the essence” means that the more top-notch innovative talents are, the more attention should be paid to the cultivation of their perseverance and meticulous craftsmanship.

4.2 Strengthening Teachers’ Spiritual Guidance to Students

The “four havings” teachers with lofty ideals and beliefs, moral integrity, solid knowledge and humanity are models of teachers in the new era. They often have the qualities of artisans who are down-to-earth, not afraid of hardship with reverence for knowledge and meticulous scientific spirit. They are not only the teachers who teach students subject knowledge, the leaders of scientific research and the shapers of scientific spirit, but also the models of students’ personality, quality and integrity. However, with the expansion of enrollment in colleges and universities, the teacher-student ratio continues to expand, teachers and students tend to alienate each other, and teaching by words and influence by deeds has gradually become an extravagant hope. The communication between students and teachers inside and outside the classroom is confined to the transmission of knowledge, which seriously lacks the exchange of ideas. Secondly, the students’ ideological and moral education have been only conducted by some special administrative departments in many colleges and universities over the years. Teachers are only responsible for teaching, and do not need to take responsibility for the cultivation of students’ morality and quality during their college years. The relationship between teaching and educating people has been artificially isolated. However, the unique knowledge of scientific ideals and beliefs, attitudes and spirits, experiences and skills, which need to be refined through practice, can hardly be transferred and mastered through regular approaches. To a large extent, it can only be achieved through imitation, communication, practice, exchange, exploration and insight in the teaching process. This also shows that teaching and educating people are inseparable from each other. In the teaching process, teachers must not only pay attention to how much scientific knowledge students have acquired, but also pay attention to their inheritance of scientific ideals, spirit, attitude and quality, because these are crucial to the innovation of knowledge and technology. Third, change the policy orientation and incentive mechanism of the personnel distribution system in colleges and universities and shift the emphasis on undergraduate teaching from oral implementation to practical

work. Make teachers willing to devote themselves to teaching career, focus on teaching work, and be able to work hard and cultivate every student with heart and soul.

4.3 Strengthen the Reform of Curriculum Structure and Curriculum Presentation, Develop Students' Innovative Potential and Cultivate Students' Craftsmanship Spirit

In the aspect of curriculum structure reform, on the one hand, emphasis should be placed on strengthening the complexity and authenticity of practical links such as practice, practical training and experiment. On the other hand, we will continue to strengthen the construction of interdisciplinary course. There are few simple problems or simplified problems that have been resolved by teachers in the society outside the school. Therefore, students must learn to face complicated, real, vague and ill-structured problems in practice, be bold in exploration, constantly try and make mistakes, tolerate failures, and do solid research. However, interdisciplinary course's study can liberate students from a narrow field of vision and improve their innovative consciousness, quality and ability. On the one hand, students should be provided with the opportunity to question and criticize what they have learned in the presentation of the curriculum. On the other hand, attention should be paid to the sociality behind the presentation of curriculum content. Questioning and criticizing are the starting points of innovation, while courses with social attributes present not only static propositions and principles, but also a series of dynamic behavioral processes involving various research activities. In this process, students can learn that the development of science and technology is actually a process of constantly discovering and solving problems, which not only contains many trivial matters, but also learn people have to learn from various mistakes. There are many reasons for the mistakes. They may be anxious for quick success and instant benefits, or they may seek merely a superficial understanding or aim too high. This presentation mode will help students to engage in scientific work in the future. It can help them form a steadfast, perseverant and rigorous scientific style.

4.4 Strengthen the Construction of Campus Culture and Take the "Last Kilometer" of Innovation and Creative Education

Campus culture refers to the educational ideas, school spirit pursued and practiced by the school as well as the knowledge value of teachers, students and employees, their attitudes and behaviors. Positive and progressive construction of campus culture plays an important role in improving college students' quality enhancement, quality shaping, cultivating temperament, cultivating sentiment and shaping soul. To strengthen the construction of campus culture, we must first emphasize the establishment of correct world outlook, outlook on life and values. The three outlooks are the individual understanding of the nature, society and humanistic world gradually formed by students in the process of growth. The correct outlooks can provide healthy spiritual power for students and provide positive guidance for innovation and sustainable innovative development from the aspects of theory, value and significance. Secondly, we must advocate the spirit of criticism and exploration, which is the starting point of innovation, and the spirit of criticism and exploration is the concrete embodiment of originality. Students are encouraged to increase the collision of different academic viewpoints under the premise of

abiding by the constitution and the law, thus bringing forth new sparks of thought and wisdom.

Third, encourage students to pursue spiritual and ideological freedom and form independent personalities. The freedom of spirit and thought is a prerequisite for innovation. Upholding the truth, daring to be pioneers is the concrete embodiment of students' independent personality and the outstanding manifestation of originality.

5. Conclusion

Times call for innovation, and innovation calls for talents. High-quality talents serve innovation through learning, development and application of knowledge of nature, social knowledge and humanistic knowledge, thus promoting the development of the times. Times thus presents more, higher and more complex requirements for innovation. However, long-term practice has taught us that if we want to go deep and far in the road of innovation, we must be accompanied by originality. Without originality, there will be no down-to-earth work and study style, no rigorous academic attitude, and the road of innovation will only become more rugged. The new era calls for innovation and originality. The new era calls for a deep integration of innovation and originality, making joint efforts to push the great cause to a new level.

References

- Chen, C. H., Zhao, S. M., & Zhao, H. R. (2016). *Leading Rules* (Vol. 7, pp. 227-231). Beijing: China Machine Press.
- Shi, Z. Y. (2017). *Public Education* (Vol. 7, pp. 363-368). Beijing: Beijing Normal University Press.
- Ye, M. L., & Chen, G. X. (2016). Contemporary Value Implication of Craftsmanship Spirit and Choice of Its Realization Path. *Exploration of Higher Education*, 2016(10), 27-31.
- Zheng, D. F. (2018). What is the "craftsmanship spirit" of the new era [EB/OL]. In *People's Political Consultative Conference Network*.