

Research on the Development of Humanities and Social Sciences in Universities of Science and Engineering

-Under the Background of the “Double First-Class” Construction

Kailin HE

School of Marxism
Xi'an University of Technology
474918828@qq.com

Kuanmin LU*

School of Marxism
Xi'an University of Technology

Abstract—The purpose of this paper is to put forward new thinking on the development of humanities and social sciences in universities of science and engineering, and to provide reference for the construction and development of universities of science and engineering. Through the analysis of the historical background and present situation of the development of humanities and social sciences in China's science and technology universities, this paper sums up the importance of humanities and social sciences, and discusses the countermeasures and paths for the development of humanities and social sciences in universities of science and engineering. Under the background of the “Double First-Class” construction of higher education in China, colleges and universities of science and engineering must attach importance to the building of humanities and social sciences, take the road of comprehensive development, and develop humanities and social sciences according to their own advantages and characteristics, thereby cultivating high-quality composite talents.

Keywords—Double first-class construction; Universities of science and engineering; Humanities and social sciences; Development path; Subject construction

I. INTRODUCTION

The humanities and social sciences are an important support for the progress and development of the society and an important core of the country's cultural soft power. University as an important base for talent cultivation, scientific research, social services, and cultural heritage. Strengthening the construction of humanities and social sciences is the only way to improve the level of scientific research, improve the quality of qualified personnel, and promote the completion of the discipline system. Under the background of “Double First-Class” construction, universities and colleges of science and engineering making “world-class universities” and “first-class disciplines” as building goals, taking comprehensive and research universities as development goals. The establishment of humanities and social sciences, the expansion of the scope of the discipline, and the building of a soft cultural campus atmosphere of humanities and social sciences, are inevitable choices for improving comprehensive competitiveness, promoting the modernization of higher education, and

building a first-class university in China and even of the world. However, based on the fact that science and engineering universities have unique science and technology characteristics, the actual situation of teacher level, of scientific research system and discipline development, of personnel training mode, the overall level of humanities and social sciences in universities of science and engineering is not obvious and lacks of characteristics and innovation. How to effectively overcome the difficulties in the development of humanities and social sciences in universities of science and engineering, and use the scientific countermeasures and the path of innovation and optimization to guide the construction and development of the humanities and social sciences, is an important research topics that faced by the managers of universities of science and engineering and the humanities and social sciences researchers.

II. STATUS AND PREDICAMENT

Since the early 1990s, China's higher education management system has undergone various reforms. China has promoted the construction of a wave of multi-universities and comprehensive universities to achieve the goal of improving the quality of personnel training, enhancing the level of scientific research, and optimizing the allocation of educational resources. Some colleges and universities of science and engineering rapidly strengthen the construction of humanities and social sciences had become comprehensive or multidisciplinary universities [1]. Nowadays, with the deepening of comprehensive reforms, higher education needs to advance the pace of modernization while adapting to the new normal of economic development. At present, there are a number of well-known universities in China that have achieved excellent academic achievements in the humanities and social sciences. However, for more local universities of science and engineering, the rapid development of the humanities and social sciences has also emerged some inevitable problems and contradictions.

Firstly, the establishment of humanities and social sciences in universities of science and engineering is short and education resources are weak. For universities of science and engineering, for a long time, they have taken the advantage of developing their own science and engineering majors and special subjects as the main roads, and these science and engineering majors have certain scale and strength. The humanities and social sciences majors in such universities are basically established in response to the new situation of higher education reform and the realization of multidisciplinary development. The establishment of humanities and social sciences in these universities is short in time, small in scope and relatively simple in form, less in investment. This results in humanities and social science resources very limited, which makes the humanities and social sciences personnel training lack the corresponding conditions and practical resources. The humanities and social science research is difficult to obtain strong support, resulting in science and engineering universities humanities and social sciences teaching ability, scientific research ability weak, even unable to form a system and a complete disciplinary system.

Secondly, the degree of emphasis on humanities and social sciences needs to be strengthened. For a long time, it has been influenced by traditional philosophy of science and engineering pragmatism and certain prejudices under the employment situation, humanities and social sciences have not received due attention in universities and campus environment, it is not only reflected in the passive attitude of students of science and engineering majors in public compulsory political courses, but also reflected in the general layout of majors in the humanities and social sciences of universities of science and engineering, the imbalance of professional structure, the lack of scientific research platforms, etc.[2]

Thirdly, the establishment of humanities and social sciences in science and engineering universities lacks the characteristics of this university, and it does not form an interdisciplinary innovation with the science and engineering majors of the university. For most universities and colleges in science and engineering in China, the conditions and scale of teachers for humanities and social sciences in some colleges and universities have reached a certain level, however, it cannot match with the same humanities and social sciences majors in universities and liberal arts colleges.

Finally, the construction and research of humanities and social sciences have their special laws. At present, science and engineering colleges and universities follow the same evaluation management system as science and engineering disciplines, which is in violation of the law of development of humanities and social sciences and cannot fully mobilize the enthusiasm of teachers for humanities and social sciences. This has led to the emergence of marginalization of humanities and social sciences.

III. SIGNIFICANCE AND NECESSITY

With China's economic development and social progress, the development of cultural undertakings has gradually been recognized and valued by society. The progress in the humanities and social sciences has played an important role in developing the socialist cultural path with Chinese characteristics and enhancing China's cultural soft power and comprehensive national strength. According to statistics from related departments, colleges and universities have gathered more than 75% of humanities and social science research forces in China, and have concentrated more than 85% of the research results in the field of philosophy and social sciences.[3] It can be seen that colleges and universities are the main force of our country's humanities and social sciences, and humanities and social sciences are an important part of college subjects, colleges and universities of the country should pay more attention to the construction and development of humanities and social sciences. This measure is both a response to the principles and policies of the party and the state on the development and prosperity of the humanities and social sciences, as well as the implementation of these measures. It is also a need to adapt to the country's economic and social reforms and the new situation. At the same time, it is of great significance for the long-term development of universities of science and engineering.

A. *The Essence of Modern University Development and The Inevitable Choice to Realize the Construction of "Double First-class".*

Universities should be referred to as comprehensive universities. A single college is not a university. Only science and engineering disciplines or science and engineering disciplines are strong, and there is no humanities and social sciences, or the humanities and social sciences are very weak, and it is hard to call them universities. Since China's reform and opening up, colleges and universities have gradually developed into comprehensive and multi-disciplinary universities. In 2015, the central government decided to coordinate the promotion of building "world-class universities and first-class disciplines", and fully considered the characteristics and construction conditions of different types of universities and disciplines. It is proposed that "world-class universities should focus on the overall construction and key construction of universities based on first-class disciplines, and comprehensively upgrade the level of talent cultivation and innovation; the construction of first-class disciplines focuses on the construction of superior disciplines and promotes the development of distinctiveness." For science and engineering universities, the development of humanities and social sciences is an important part of strengthening the overall construction and promoting the development of specialties.

B. Optimize the Discipline Structure of Universities of Science and Engineering and Maintain and Develop Characteristic

For a long time, the state has attached importance to and emphasized the importance of industrial production. The main performance is that science and engineering disciplines (especially engineering) account for a large proportion in all disciplines, and humanities and social sciences account for a small proportion, which results in the imbalance in the discipline structure of universities. Therefore, the development of humanities and social sciences in universities of science and engineering has optimized the subject structure of higher education institutions in China and promoted the balanced development of higher education. Looking at the current world and domestic famous universities, there are two obvious rules: First, the world-class universities are not universities with a single subject, but are universities with multiple disciplines or comprehensive disciplines. The second is that these world-class universities all have first-class or at least high-level liberal arts without exception. Academician Wang Dazhong of Tsinghua University once said: "To create a world-class university is inseparable from the support of high-level liberal arts." [4]

C. The Cultivation of High-quality Compound Talents in Universities of Science and Engineering

Talent cultivation is the central link of modern university functions. The cultivation of talented people by virtue of their unique disciplines is incomplete. There must be a relatively complete set of disciplines and academic atmosphere. From the perspective of talent cultivation, under the circumstances of rapid technological development, accelerated knowledge updating, and faster flow of talent, a multi-talented and comprehensive knowledge mastering comprehensive high-quality talents can better adapt to the changing times. Therefore, the university's talent training objectives should shift to the cultivation of talents with high overall quality, broad knowledge, and strong self-learning ability. In the new century, comprehensive quality education has become the subject of higher education. Universities of science and engineering must meet the requirements of comprehensive quality education, especially the development of humanities and social sciences. Strengthen the development of humanities and social sciences on the basis of the development of science and engineering disciplines, and provide a good environment and certain realistic conditions for the education and development of humanities and social sciences. Pay attention to the science and engineering university students' study and research on related humanities and social sciences, help to optimize the knowledge structure of science and engineering university students, and provide a possibility for the realization of students' overall quality cultivation. This kind of student who combines both liberal arts and sciences will not only help enhance his employment competitiveness, but also lay a good foundation for his future career.

IV. COUNTERMEASURES AND PATHS

The humanities and social sciences embody the prospects and strength of the future development of a country and a nation. Judging from the current situation, the development of humanities and social sciences in China's science and engineering universities is slow. One of the reasons is that the subordinate status of the humanities and social sciences major has not changed, the understanding of the value and significance of humanities and social sciences is still influenced by market orientation and utilitarian orientation. Moreover, the humanities and social sciences in universities of science and engineering have not been combined with science and engineering disciplines, and have not formed a humanities and social sciences specialty unique to this university. Therefore, under the premise of changing thinking, universities and polytechnics should develop humanities and social sciences from the following four aspects:

A. Focusing on the Whole, Highlighting Features, and Rationalizing the Humanities and Social Sciences

Universities of science and engineering should work hard to build an open, communicative school-running pattern to create a good environment for the development of liberal arts talents and academic research. In the process of developing the humanities disciplines, universities of science and engineering must take a position on the humanities as a whole, relying on the "science and engineering" background. We must combine the humanities setting with the characteristics of our school, do not copy the model set by the humanities of a comprehensive university, nor should we devote ourselves to the development of a comprehensive humanities and social science system. We should adhere to the principles of key development and characteristic development, rationalize the layout of humanities and social sciences, and adhere to integrity while taking the path of characteristic development [5].

B. Evaluate the Development of the Humanities with a Dynamic and Development Perspective

The development of the discipline has its own specific regularity, and the development of the humanities needs to undergo long-term accumulation. In the evaluation of humanities development in universities of science and engineering, we must pay attention to the stage and process of the development of the discipline. Many universities of science and engineering often use inertial and rigid standards when evaluating humanities, such as the number of papers, research funding indicators, the number of topics applied for, and so on. This kind of quick success and instant benefit practice can only make the humanities go to the wrong path, which only emphasizes quantity and quality, and it is not conducive to promoting the development of humanities.

C. Break the Boundary of Disciplines and Make Full Use of Various Resources to Promote the Healthy Development of Humanities and Social Sciences

Universities of science and engineering should fully understand the role of the external environment when developing humanities and social sciences. It is necessary to understand the status of the school, identify the direction of development, and fully reflect its own characteristics. It is also necessary to seriously study the surrounding environment of the market and actively and actively strengthen contact and cooperation with the government, society and enterprises, and strive for various resources. At the same time, we must strengthen international and intercollegiate (especially strong universities) cooperation so that more teachers or professors of humanities and social sciences can have the opportunity to go out, increase knowledge, expand ideas, so as to narrow the gap with the dominant universities.

D. Realize the Leap-forward Development of Humanities Through Human Resources Strategy

For universities of science and engineering, the main obstacle to the development of humanities is the shortage of talent. In order to promote the rapid development of humanities in universities of science and engineering, a combination of conventional and unconventional strategies is adopted in the talent strategy. From a routine point of view, it is necessary to further enhance the professional ability and level of in-service teachers, such as increasing visiting opportunities, providing financial support and project support, and accelerating the training of academic leaders and academic backbones of the university. From an unconventional point of view, it is possible to employ high-paying teachers and professors, or to hire well-known scholars to attend lectures in universities, and invite them to take part-time or guest professorships, and achieve humanities and social sciences development through talent exchanges [6].

V. CONCLUSION

The universities of science and engineering universities should adapt to the current economic and social development on the road to "Double First-class" construction, seize the historical opportunity of education reform and think tank construction, break through the development bottleneck of humanities and social sciences. At the same time, we must fully mobilize the enthusiasm of humanities and social science teachers, balance the relationship between teaching and research, and establish a correct working attitude. It is courageous to innovate in institutional mechanisms and grasp the laws of the development of higher education. In particular, we must respect the characteristics of the disciplines of humanities and social sciences, and create a scientific, rational, liberal and harmonious development environment. Integrate the humanities and social sciences with the disciplines of science and engineering, and consciously explore the characteristic roads that suit their own development from the top-level design, and build first-class science and engineering and humanities and social sciences majors with characteristics. The only way to make an innovative country to make its due contribution is that improve the overall level and comprehensive strength of universities of science and engineering, and strive to create world-class universities and first-class disciplines.

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