

Strategies for Improving Scientific Research Ability of Private Colleges and Universities in the New Era

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ABSTRACT. *In the context of the popularization of higher education in the new era of socialism with Chinese characteristics, private colleges and universities must strengthen their scientific research work in an all-round way in order to achieve connotative development, which is related to the core competitiveness of schools, the comprehensive strength of schools and the quality of personnel training. However, the survey found that private colleges and universities in the state policy support and funding, scientific research positioning and purpose, teachers' scientific research awareness and enthusiasm, scientific research team building and self-innovation and other aspects of the problems and shortcomings. Accordingly, the paper puts forward the strategies to improve the scientific research ability of private colleges and universities: the government should improve the policy of supporting the development of scientific research, the top-level scientific design of private colleges and universities should steadily promote scientific research work, improve the incentive policy of scientific research, clear the main direction of research, set up scientific research innovation team, build scientific research cooperation platform and improve the security system.*

KEYWORDS: *New era; Private colleges and universities; Connotative development; Scientific research ability; Promotion strategy*

1. Introduction

The report of the Nineteenth National Congress of the Communist Party of China clearly points out that we should “speed up the construction of first-class universities and disciplines and realize the connotative development of higher education”. As of December 2018, there were 749 private colleges (including 265 independent colleges) in China, with 649.6 million students.[1] It can be seen that private colleges and universities play an important role in the higher education system. Under the background of the popularization of higher education in the new era of socialism with Chinese characteristics, the development of private colleges and universities is facing both opportunities and challenges. In order to achieve the rapid development of private colleges and universities, we must practice internal

merits, that is, to build the advantages and core competitiveness of private colleges and universities through connotative development.[2] It is the requirement of the new era to follow the connotative development road in accordance with the situation. At present, in order to achieve the connotative development, private colleges and universities must strengthen scientific research work in an all-round way. Improving scientific research ability is also a reflection of the improvement of school cultural soft power, which is related to the core competitiveness of the school, the comprehensive strength of the school and the quality of personnel training. It is of great significance for the country to promote scientific and technological innovation a 1.Current Situation of Scientific Research Work in Private Colleges and Universities and achieve key technological breakthroughs.

It is an important task to study and analyze the current situation and influencing factors of scientific research work in private colleges and universities, and to put forward strategies to improve scientific research work in private colleges and universities. Since 2019, the author has conducted questionnaires and interviews with 22 private universities and 300 teachers in different regions and levels around the theme of “scientific research work in private universities”. Through research and analysis, it is found that in recent years, the scientific research work of private colleges and universities has been greatly improved, but there are also many outstanding problems that can not be ignored.

1.1 Achievements of Scientific Research in Private Colleges and Universities

Most private colleges and universities attach great importance to scientific research work, set up special scientific research departments (ministries), establish and constantly improve the scientific research management system, set up special funds to support teachers to carry out scientific research. In the investigation, the author found that scientific research managers and some teachers have a rational understanding of the status and role of scientific research in the development of private colleges and universities. They believe that solid promotion of scientific research work is of great importance to improving the level of running private colleges and universities and cultivating their characteristics. Almost all teachers can realize that teachers' active scientific research work is of great benefit to the improvement of the overall running level of private colleges and universities. Nearly 90% of teachers believe that carrying out scientific research work can promote teachers' professional growth, improve teachers' innovative ability, and promote the transformation of innovative consciousness and achievements in teaching. Most managers of scientific research think that scientific research work plays a leading role in the cultivation of innovative and entrepreneurship talents in private colleges and universities, and promotes the sustainable development of private colleges and universities. Survey data show that the number of scientific research projects at all levels in private colleges and universities continues to increase, the level and level of vertical projects have improved, high-level and high-level scientific research projects have made certain breakthroughs, the quantity and quality of scientific research papers have made considerable progress, and some private colleges and

universities have been CSSCI, the core of Peking University, SCI. The number of papers included in journals such as EI, CPCI and CSCD shows an increasing trend year by year. The ability of some private colleges and universities to serve the development of schools and regional economic and social development is increasing.

1.2 Problems Existing in Scientific Research Work of Private Colleges and Universities

Firstly, the government's policy support and financial support are insufficient. The survey found that private colleges and universities are still in an awkward position in terms of policy support in terms of project establishment, funding or awarding of scientific research achievements. In the limited project declaration, private colleges and universities generally have fewer places to declare than similar public colleges and universities. It is not easy for private colleges and universities to declare awards for scientific research achievements. The departments and provincial scientific research projects can barely declare, but it is difficult to declare social science or self-Science fund projects at or above provincial level. Moreover, private colleges and universities receive little investment in public finance, and most of the projects are self-financing. Private colleges and universities mainly rely on tuition fees. Adequate capital investment is the guarantee for the normal development of scientific research work in schools. However, private colleges and universities can use special line funds to invest in scientific research. Taking a private university as an example, in the past three years, the number of funded projects is less than 10% of the total number of projects. Most of the projects are set up by higher authorities, but the research funds are self-financing. Private colleges and universities invest hundreds of thousands of yuan in supporting funds every year to ensure the normal development of these topics. Compared with the research funds of public universities, which are millions, tens of millions or even hundreds of millions of Yuan, how can the scientific research strength of private colleges and universities compete with it?

Secondly, there are deviations in the orientation and purpose of scientific research in private colleges and universities. Unlike research universities, the discipline and specialty construction of private universities is mostly based on market orientation, and scientific research work generally starts from vocational education and focuses on applied research. Employment and entrepreneurship orientation and application-oriented personnel training are the vitality and advantages of private colleges and universities. However, many managers of private colleges and universities are recruited from public colleges and universities, which makes the research work of private colleges and universities similar to the model of public colleges and universities, lack of flexibility and innovation, and it is difficult to form their own research characteristics and advantages. [3] In the practice of scientific research, many private colleges and universities fail to integrate all forces, neglect external forces such as brotherly colleges, cooperative enterprises and scientific research institutes. The orientation and purpose of scientific research work are not scientific and reasonable enough. They fail to give full play to the flexible

characteristics and advantages of the system and mechanism of running schools in private colleges and universities. They also fail to combine the latest research results with technological processes, thus making it difficult to feed back the teaching. Scientific research results are also difficult to be transformed to the ground, and less can achieve the expected application value and economic benefits.

Thirdly, teachers' scientific research consciousness and enthusiasm in private colleges and universities need to be improved. In some private colleges and universities, the status of scientific research work is still in a weak position, the top leaders do not attach enough importance to scientific research work, some managers have misunderstandings about scientific research work, neglecting the important role of scientific research work, leading to the inadequate development of scientific research work. Some leaders think that carrying out scientific research work will impact teaching work. Others think that carrying out scientific research work in private colleges and universities has little value. No matter what kind of misunderstanding, it is extremely unfavorable to the development of scientific research. The structure of teachers in private colleges and universities is unreasonable and lack of leading figures in scientific research. Many front-line teachers are not fully aware of the important functions of scientific research work. The atmosphere of scientific research back-feeding teaching, subject specialty construction and new curriculum construction has not yet formed. Young teachers under 45 years old in private colleges and universities account for more than 75% of the total, and young teachers are engaged in it. Educational and teaching work is still short, the importance of scientific research work is not fully understood, and the ability of scientific research is even weaker. More than 70% of teachers in private colleges and universities in scientific research work only to meet the needs of annual assessment and professional titles. Nearly 20% of young teachers think that the main task of Private Colleges and universities is teaching, not teaching. Acknowledging the important role of scientific research work in promoting the development of schools and educating people. In the investigation, the author finds that because of the long-term accumulation of scientific research work, it is difficult to achieve immediate results in the short term, which leads to the common phenomenon that the management of private colleges and universities attach more importance to teaching than scientific research, and the strategic thinking of grasping scientific research to promote development has not really been put into practice.

Fourthly, research team construction lags behind, and independent innovation is weak. In recent years, private colleges and universities have strengthened the connotation construction, made great progress in the construction of teaching staff, and the number of teachers engaged in scientific research is also increasing. Nevertheless, teachers in private colleges and universities are mainly teaching-oriented. Teachers' large amount of time is occupied by teaching work. Generally, they can only use fragmentary time to do scientific research. At the same time, the age, educational background and professional title of teachers in private colleges and universities do not have advantages in declaring scientific research projects, and their enthusiasm is not high. Their scientific research strength is relatively scattered, and the construction of scientific research teams is lagging behind. Many private

colleges and universities have not formed the main direction of scientific research. Private colleges and universities lack characteristics in independent innovation, the level and level of scientific research achievements are low, the quality is not good enough, and the major achievements are not enough. There are fewer patents applied and authorized, and few awards for high-level scientific research achievements. In the same type of research direction or subject declaration, private universities and public universities do not have the competitiveness at all, and the probability of setting up projects is very small, which seriously hampers the enthusiasm of teachers to devote themselves to scientific research.

Fifthly, there are some shortcomings in the construction of cooperation platform and scientific research guarantee system. It is an important breakthrough point to build a cooperative platform of scientific research projects with characteristics and competitiveness to enhance the scientific research strength of private colleges and universities. However, in the survey, it is found that private colleges and universities have not yet built a mature cooperation platform for regional economic and social development, enterprises and institutions, scientific research institutes, government functional departments and other services, but still remain in the single-handed use of personal resources to contact research topics. Due to the lack of scientific research cooperation platform, the core competitiveness of some open bidding projects is not strong, and it is difficult to successfully establish projects. Some private colleges and universities have deficiencies in scientific research management institutions, scientific research management system, evaluation system, incentive mechanism and other security systems, which lead to the lack of professional scientific research management and low enthusiasm of teachers in scientific research work.

2. Significance of Improving Scientific Research Ability in Private Colleges and Universities

In order to achieve connotative development, it is imperative for private colleges and universities to comprehensively improve their scientific research ability. Private colleges and universities can improve their scientific research ability, the quality of personnel training, the level of teachers' construction, the effectiveness of serving regional economic and social development, and thus enhance their core competitiveness in general.

2.1 Scientific research work in private colleges and universities can boost the quality of talent cultivation

The demand for talented people in the development of regional economy and society is changing rapidly. Mere possession of knowledge and skills can not meet the requirements of economic and social development in the new era, which requires in-depth scientific research. By carrying out scientific research work, teachers can timely understand the specific requirements of society for talents' knowledge, ability and quality, so as to timely revise the talent training program, optimize the

curriculum system, innovate the textbook system and update the teaching content in accordance with the trend of social change, so as to continuously adapt the high-quality applied talents trained to regional economic societies. The demand of the times that will develop; [4] The emergence of modern educational technology means, such as Mu class, micro class and flip class, requires teachers to constantly study students, teaching methods and methods, and constantly adapt to the development of the situation. More and more private colleges and universities at undergraduate level have fully realized the importance of scientific research work. With the help of continuous scientific research, they can make their disciplines and specialties have their own characteristics and level.

2.2 Scientific Research in Private Colleges and Universities Can Raise the Level of Teachers

Under the background of the new era, the development of economy and society urgently needs a large number of high-quality talents with innovative spirit, which puts forward new requirements for teachers' teaching, ability and quality. Teachers' scientific research is of great value and significance for improving students' innovative ability. The process of scientific research itself is a process of solving problems, and also a process of improving teachers' theoretical level, teaching ability and comprehensive quality. Teachers' scientific research is an inevitable requirement for training innovative talents. Teachers in private colleges and universities also shoulder the responsibility of cultural inheritance and innovation, keep abreast of the latest developments of disciplines and specialties at home and abroad through scientific research, and integrate theory with practice, keep pace with the times and go deep and simple in teaching; guide students' graduation theses to select appropriate topics and attract students to study with ease; Students' participation in scientific research activities helps to improve their enthusiasm for learning, enhance their confidence in exploring and innovating. Teachers constantly refine research directions through scientific research and strive for more and wider project platforms, thus creating more favorable conditions for teachers' growth and development, and realizing policy attraction and career retention. To treat people emotionally and effectively improve the construction level of teachers in private colleges and universities.

2.3 Scientific research in private colleges and universities helps to enhance the effectiveness of serving regional economic and social development

Private colleges and universities are basically Local Application-oriented Colleges and universities, taking root in local areas, serving regional economic and social development is their natural choice. Teachers of private colleges and universities serve local economic and social development by means of scientific and technological consultation, scientific and technological development, science and technology going to the countryside and horizontal topics, promote the combination of scientific research, teaching and industry, truly realize "integration of industry

and education, school-enterprise cooperation”, and make private colleges and universities become an important “intellectual base” and “power source” for local social development. . Private colleges and universities should carry out undergraduate research extensively, realize the organic combination of study, work and research, develop more horizontal topics with application and promotion value, constantly enhance the pertinence and effectiveness of serving regional economic and social development, and then effectively promote their own health and sustainable development.

3. Analysis of Strategies for Improving Scientific Research Ability of Private Colleges and Universities

It is the fundamental mission of higher education to cultivate people by virtue. Therefore, private colleges and universities should attach great importance to improving the quality of personnel training. Promoting the connotative development of private universities through scientific research is an inevitable requirement to improve the quality of personnel training. Private universities attach importance to scientific research work as an important strategic choice to expand their own influence. To comprehensively enhance scientific research ability, the following strategies are needed.

3.1 The government should improve the relevant policies to support the development of scientific research in private colleges and Universities

Private colleges and universities are an important part of higher education in China. They have made outstanding contributions in many fields, such as personnel training, scientific research, social services, cultural inheritance and innovation, as well as international exchanges and cooperation, especially in promoting the popularization and popularization of higher education in China. Government education authorities should highlight the requirements of “new era, new weather and new actions”, keep pace with the times, explore and formulate supporting policies that are more conducive to the systematic, pertinent and maneuverable development of scientific research in private colleges and universities, issue guidance documents to encourage and implement the inclination towards scientific research in private colleges and universities, and serve as subjects in private colleges and universities. Research provides a good incentive environment, properly set up a number of private higher education projects and increase the scope of scientific research funding, to help improve the scientific research capacity of private colleges and universities in an all-round way.

3.2 Private Colleges and Universities Should Steadily Promote Scientific Research through Scientific Top-level Design

Private higher education in China started late, and most of its research foundation is weak. The orientation of scientific research should not be frontier and

basic research, but applied research. Private colleges and universities should improve the management institutions and systems of scientific research organizations, set up scientific research teams, focus on engineering applications and technological innovation, take the needs of regional economic and social development as the guide, improve and optimize the scientific and technological management system through policy incentives and mechanism drive, promote the integration of assets and education and resources, and form a prominent development focus. Direction, the topic selection is mainly focused on the application of technical topics, such as production process technology improvement, expansion and energy-saving transformation, product quality inspection, staff skills training and so on. [5] At the same time, private colleges and universities should adhere to the topic as a guide to promote the development of scientific research, focus on extracting topics from practice, strive to enhance the theoretical level, and form a series of results with guiding and promoting value. In the field of professional development of science and technology, we should focus on supporting the construction of new disciplines and professional master's degree cultivation sites, creating superior disciplines and timely declaration of professional master's degree. Multi-party cooperation and collaboration, practice the concept of "innovation, coordination, green, open and sharing" of scientific research and development, and stimulate the enthusiasm and potential of all parties to participate in scientific research. Private colleges and universities should strive to form a favorable pattern of interaction and mutual promotion between teaching and scientific research, and lay a solid foundation for the construction of high-level application-oriented universities with distinctive characteristics.

3.3 Private Colleges and Universities Should Improve the Incentive Policy for Scientific Research

Publishing policies to support the development of scientific research and increasing incentives for scientific research are necessary measures for private colleges and universities to enhance their scientific research capacity. Private colleges and universities should formulate preferential policies to introduce a number of high-level technical experts, high-level talents with potential for development, train a number of potential backbones of scientific research, classify and develop teachers with different emphasis, and build a solid talent base for scientific research work. At the same time, private colleges and universities should actively strive for the support of relevant government departments for their own scientific research development, allocate special funds for scientific research every year, and increase investment in scientific research funds year by year, so as to ensure that the scientific research demands of teachers are met. Private colleges and universities should scientifically formulate scientific research management system, scientific research assessment and reward system, scientific research post evaluation and employment system, standardize scientific research work with system, stimulate teachers' enthusiasm to participate in scientific research with assessment and incentive policy, effectively solve teachers' problems in scientific research facilities, site resources, personnel allocation, etc. It is difficult to create a harmonious and

relaxed academic environment and atmosphere. Private colleges and universities should ensure the scientific research management system in place, possess core elements such as talents, technology and capital, optimize the allocation of innovative resources, and promote teachers' enthusiasm to participate in scientific research.

3.4 Private Colleges and Universities Should Define the Main Target Direction and Set up Scientific Research and Innovation Teams

According to the scientific research principle of “concentrating resources, highlighting key points and making efforts accurately”, private colleges and universities should take into account the development potential of traditional dominant disciplines, emerging disciplines and new disciplines in order to select or condense the key problems that restrict the development of modern industrial technology, in view of the need for the construction of key disciplines and professional master training sites. Several key research directions should be focused on, and three-level scientific research projects should be established. In view of the incompatibility between the development trend of disciplines and the number of scientific research projects, private colleges and universities should moderately add school-level scientific research projects, and absorb excellent students to participate in research, so as to form the basis of teachers' scientific research development, improve the rate of provincial scientific research projects, and strengthen teachers' disciplines through the construction of three-level project system of schools, provinces and countries. Research consciousness, create a good scientific research ecology. [6] The problems existing in the development of regional economy and society are the starting point of scientific research and innovation in private colleges and universities. Vigorously carrying out “school-land” cooperation can solve the shortage of funds restricting the innovation and development of scientific research in private universities, accelerate the transformation rate of scientific research achievements, further enhance the level of discipline and specialty construction, and realize the ability of “self-hematopoiesis” through scientific research activities. According to the actual needs of the key development directions of scientific research, private colleges and universities should break the conventional methods and treatment, introduce some well-known scientific research leaders, and take the lead in setting up a scientific research and innovation team with optimized combination.

3.5 Private colleges and universities should actively build scientific research cooperation platform and improve the security system

Private colleges and universities should highlight the principal position of secondary branches, dislocate with public colleges and universities, actively build cooperation platforms for in-school and out-of-school scientific research, and construct a scientific research guarantee system that meets their own development strategic requirements, reflects the characteristics of Applied Technology innovation,

and serves local economic and social development and the transformation of new and old kinetic energy projects. A three-tier platform with dual functions of the school-level collaborative innovation center, the research and development center of the second-tier institutes and departments is built in the school. At the same time, we should build an all-round and open scientific research platform to realize the convergence of the elements of scientific research development. Fully understand the important role of schools, enterprises, institutions (research institutes) and international cooperation in promoting the development of scientific research in schools, strengthen the construction of the management platform for school foreign cooperation, set up a special office for promoting foreign cooperation, which is specially responsible for school external communication. Strengthen the industrial awareness of the secondary units to actively dock with the industry, make full use of the social influence of the subject and professional leaders, attract social resources, network-related high-end talents, strengthen the strength of scientific research development, and form a favorable development pattern of school promotion, College Initiative and industry follow-up. Private colleges and universities should take their own disciplinary and professional advantages into consideration and be rooted in the local areas, actively carry out scientific research and applied technical services, help enterprises and institutions to solve practical problems encountered in technological transformation, product production and enterprise management, [9] Find research topics from them, and actively strive to serve local horizontal cooperation projects, and on this basis. On the basis of declaring all kinds of government vertical topics, and then continuously improving the scientific research capacity of private colleges and universities, achieving major breakthroughs in some applied technology disciplines, obtaining scientific research awards at or above the provincial and ministerial levels, forming the necessary basis for training units of declaring professional master's degree, implementing school development planning, building scientific research innovation platforms, and constructing one by one. The support system of scientific and technological R&D innovation layers, the construction of a number of collaborative innovation centers, efforts to build private colleges and universities scientific research innovation brand, and the formation of a good ecological development of scientific research. We should adhere to the concept of "research for application". We should establish a mechanism for transforming scientific research achievements, set up an organization for transforming scientific research achievements, and coordinate the management of the transformation of teachers' scientific research achievements and University Students' innovative achievements. We should formulate policies to guarantee the transformation of scientific research achievements and build a supporting system for policy consultation, legal services and incubation of scientific research achievements. Pay attention to the timely transformation of scientific research results to service teaching. Scientific research results should directly serve teaching reform, students' innovation and entrepreneurship education, school innovation and development, and promote the quality of personnel training. Private colleges and universities should improve their patent awareness and intellectual property protection measures, formulate a series of safeguard policies such as "patent management" and "transformation of achievements", and focus on guiding and encouraging young and

middle-aged backbone teachers to make joint innovations across disciplines and fields, so as to form a number of high-value achievements with independent intellectual property rights, and then improve themselves in an all-round way of Scientific research ability.

4. Conclusion

Under the background of the new era, it is an inevitable choice for private colleges and universities to improve their scientific research ability in an all-round way to realize their own connotative development, to improve the quality of personnel training, to enhance the level of teachers' construction, to enhance the effectiveness of serving regional economic and social development, and thus to enhance their core competitiveness in general. Private colleges and universities need not only government policy incentives and financial support, but also their own implementation strategies from top-level design of science, improvement of research incentive policies, clear direction of scientific research, establishment of scientific research innovation team, establishment of scientific research cooperation platform and sound security system. Although private colleges and universities have made considerable progress in scientific research work and accumulated some experience, looking forward to the future, due to their own weak historical and cultural accumulation, relatively scarce research leaders, lack of research funds and many other reasons, private colleges and universities to enhance their scientific research capacity and further deepen the connotative development, still has a long way to go.

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