Talent Training and Scientific Research: The Historical Mission that University Teachers Should Shoulder

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Abstract: Competition in the contemporary world hinges on talent and technology. As China marches toward the Second Centenary Goal, the nation vigorously promotes general university education and vocational and technical education—an important strategic decision to cultivate talents for modernization and build a world power in science and technology. To achieve this objective, university teachers must emulate the noble virtues of outstanding educators, uphold the craftsmanship spirit of dedication and professionalism, and consciously shoulder the historical mission of talent cultivation and scientific research. Therefore, teachers engaged in university education should effectively integrate scientific research into their teaching practices, enabling research to propel university education toward greater heights like a sail navigating the vast ocean.

1. Introduction

The increasingly fierce competition in the world today is essentially a competition for technology, which in the final analysis boils down to a competition for talent. For the long-term development of the country and the nation, we must vigorously cultivate construction talents and continuously advance science and technology. In the 21st century, as we stride toward the Second Centenary Goal, China not only prioritizes the development of general university education but also vigorously promotes vocational and technical education in universities. This is a crucial measure to cultivate talents for socialist modernization and an indispensable path to fostering a large number of outstanding scientific and technological talents and becoming a world power in science and technology. "Cultivating talents is a long-term plan for the country and the nation, and the competition for talents in the world today first and foremost is a competition for talent cultivation."[1] In the process of socialist modernization, we need to "cultivate more high-quality technical and skilled talents, craftsmen, and great masters of craftsmanship."[2] Therefore, efforts must be made to improve the quality of university education and teaching, and scientific research serves as one of the key engines to achieve this goal—it equips university education with wings to soar and a sail to navigate toward the future.

However, there is an undeniable phenomenon in ordinary universities, especially vocational colleges: some teachers are only diligent in teaching but neglect scientific research, even viewing it as a burden or a "white elephant"—a contradictory state of mind where it feels a pity to abandon yet useless to retain. We believe that it is abnormal for a university teacher to focus solely on teaching without engaging in scientific research in higher education, and this passive situation should be rectified as soon as possible.

To elaborate on this issue, we will explore the following aspects, seeking insights and advice from academic experts.

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2. The Necessity of Integrating University Teaching with Scientific Research

As we all know, regardless of the era or the type of university, educators must shoulder two core missions: talent cultivation and scientific research. These two missions are like the wheels of a chariot galloping on the battlefield—both must advance in tandem, and neither can be dispensed with.

When it comes to talent cultivation, both general universities and vocational colleges are inseparable from teachers' teaching work. As an ancient saying goes: "A teacher is one who imparts knowledge, teaches skills, and resolves doubts." Fulfilling teaching responsibilities is the bounden duty of every university teacher and the foundation for their professional survival and development. The renowned philosopher and educator Karl Theodor Jaspers stated: "The essence of education is that one tree shakes another, one cloud pushes another, and one soul awakens another."[3] Therefore, talent cultivation is not merely about imparting knowledge and resolving doubts; it is more importantly about conveying moral principles, enabling the talents we cultivate to possess noble ideological and moral qualities, profound patriotic feelings, and lofty ideals and aspirations. Ideological and moral integrity and patriotic feelings are the roots of a person, while ideals and aspirations are their tender buds—only with deep roots can the buds grow steadily, thrive, and eventually become towering trees.

To cultivate a generation of outstanding talents, teachers must have a strong sense of responsibility and mission, that is, to practice the craftsmanship spirit. Without first-class moral character, it is difficult to achieve first-class skills; only by pursuing perfection in work and striving to achieve the highest quality can one maximize their life value—this is the craftsmanship spirit of extraordinary quality. Educators should possess this exceptional and dedicated craftsmanship spirit. Therefore, we should regard cultivating talents with excellent moral character, profound knowledge, exquisite skills, and sound personalities as the top priority of teaching work. To fulfill this sacred mission, we need the craftsmanship spirit of sincere and unwavering dedication. The craftsmanship spirit embodies a life philosophy of investigating things to gain knowledge and cultivating one's mind with sincerity; it establishes a life belief of elevating skills to the realm of art and maintaining a transcendental and optimistic attitude[4]. It serves as an effective remedy for the prevalent impetuosity and short-sightedness in contemporary society!

In universities, the reason why teachers must integrate teaching with scientific research lies in the following aspects: First, teaching and scientific research are inseparable in all types of universities. Although vocational colleges have their unique characteristics—requiring integration of production and education as well as cooperation between schools and enterprises—they can never do without scientific research. If we are to explore the true essence of teaching, we must adopt scientific methods, making research an inherent task of universities; furthermore, since science is predicated on inheritance, scientific research cannot be separated from teaching work[3]. Second, a university teacher who never engages in scientific research will find it difficult to elevate their teaching level to a new height. As the saying goes, "A soldier who does not aspire to be a general is not a good soldier"; similarly, a teacher who does not strive to be excellent is not a qualified teacher. Although not everyone can become outstanding, everyone can practice excellent qualities. As a responsible and mission-driven teacher, who does not yearn for success? If so, is it not reasonable to engage in scientific research in addition to teaching? Third, from a practical perspective, "the mind and brain improve with use and deteriorate with neglect"; the only way for a university teacher to keep their mind and brain youthful is through continuous learning, hard work, and diligent thinking, and scientific research is the driving force that sustains their mental vitality. No teacher wants to achieve nothing in their lifetime; to enhance their capabilities and realize their life ideals, they must engage in scientific research while fulfilling their teaching duties.

3. The Complementary Relationship Between University Teaching and Scientific Research

To grow rapidly, university teachers—especially young teachers—must learn to "walk on two legs": both conduct teaching and engage in scientific research. This requires teachers to possess the

professional spirit of "taking teaching and research as pleasure and quality as life," as well as the ideological perseverance to work diligently and contribute selflessly over the long term. If one only focuses on teaching without sparing time for scientific research, they will never be able to achieve significant progress.

So, what kind of relationship exists between teaching and scientific research? Their relationship can be summarized as follows:

First, teaching is the root deeply embedded in the soil, while scientific research is the branches and leaves growing on the tree—only with deep roots can the tree be lush and fruitful.

In other words, teaching is the primary responsibility that teachers must uphold. We must be dedicated, hardworking, and professional because teaching is the foundation of our career, the basis of our livelihood, and the root of our existence. Teaching not only involves "imparting knowledge" and "cultivating people" but also requires "learning"; this "learning" does not refer solely to students' learning but also to teachers' continuous self-improvement. In today's information age, to be a competent teacher, one must constantly enrich themselves—only through continuous learning can there be a steady stream of "living water" for teaching. If we deepen the "roots" of teaching, we can lay a solid foundation for scientific research to grow into strong and lush branches and leaves. As an ancient saying goes: "Cultivate the roots to await the fruits; add oil to expect the light. A tree with luxuriant roots will bear abundant fruits; a lamp with sufficient oil will shine brightly"[5]—this perfectly illustrates the relationship between teaching and scientific research.

Second, teaching is the experimental field for growing crops, while scientific research is the plow and hoe for intensive cultivation—only through meticulous farming can we achieve a good harvest.

Cultivating talents is similar to growing crops: it requires processes such as plowing, sowing, seedling raising, weeding, fertilizing, and irrigating to foster a generation of talents. The type of talents to cultivate and the methods to adopt are determined by teaching work; however, the laws to follow in cultivation and how to cultivate outstanding talents require scientific research. Without scientific research, it is impossible to predict the outcomes of teaching. Therefore, to ensure a good harvest in the experimental field, we must not only sow seeds and raise seedlings in a timely manner but also work diligently and manage meticulously. Is cultivating talents any different? We should also, according to the individual characteristics of students, "cultivate the soil, apply fertilizer, water the plants, and nourish the flowers," and nurture them quietly with the spirit of "moistening things silently" and selfless dedication. Today, we are fortunate to live in a great country and a progressive era! In such extraordinary times, "there must be extraordinary people to accomplish extraordinary things, and extraordinary things to achieve extraordinary achievements."[6] The country and the era need "extraordinary people" to do "extraordinary things" and make "extraordinary contributions."

Undoubtedly, what university teachers do is "extraordinary things"; we should seize the opportunity to meticulously cultivate the "Garden of Eden" of education and make contributions to talent cultivation.

Third, teaching is the source of raw materials, while scientific research is the precision processing factory—only through skilled craftsmanship can brown rice be transformed into delicious food.

In the teaching process, "teaching" and "learning" are in a dialectical unity, and so are teaching and scientific research. Without "learning," there can be no "teaching"; and "teaching" will undoubtedly encounter various puzzles, which require resorting to "learning"—the so-called "teaching and learning promote each other" reflects this dialectical relationship. When facing various unresolved issues, we also need to conduct scientific analysis to find solutions—that is, the so-called "research." This cycle repeats endlessly, ultimately leading to continuous improvement and perfection. As ancient sages said: "One who learns realizes their ignorance; one who teaches realizes their perplexity."[7] In fact, this phenomenon of "realizing ignorance through learning" and "realizing perplexity through teaching" is precisely the problem that we need to study and solve in

teaching. Standing at the forefront of teaching, we prepare lessons and give lectures every day—this is not only a process of completing work but also a process of discovering problems, as well as a process of self-learning, self-reflection, and self-improvement. In this process, we accumulate a wealth of raw materials and encounter many perplexing issues, which are worthy of our consideration, analysis, and research to elevate them to rational understanding. This rational understanding is the product forged from the materials and problems in teaching, which can be described as scientific research achievements refined through processes such as extracting the essence from the dross, distinguishing truth from falsehood, connecting the dots, and delving into the essence.

Finally, teaching is a ship ready to sail the sea, while scientific research is the sail that propels it forward—only a ship with a raised sail can travel fast and far.

Generally speaking, a ship sailing on water leaves no trace, but a ship with a raised sail can travel far and be seen clearly. For university teachers, engaging in scientific research in addition to teaching and conducting scientific analysis of teaching-related issues not only helps solve practical problems in teaching but also enables them to grasp laws and improve quality. If one only focuses on teaching without engaging in scientific research, they will never be able to make their teaching "ship" sail far or leave behind the most valuable achievements; only by letting scientific research raise the "sail of distant voyage" can the "ship of teaching" ride the wind and waves. We know that ancient people regarded research and writing as a great cause that contributes to national governance and achieves immortality. Therefore, ancient virtuous people who wished to pass down their names to future generations often entrusted their ideas to books and writings. Admittedly, we may not be able to write "immortal works that govern the country," but we can record our insights from teaching, analyze the problems we encounter, and find solutions—why not do something that brings multiple benefits?

In summary, teaching and scientific research are complementary and mutually reinforcing. Emphasizing one while neglecting the other will make it difficult to achieve ideal results; only through the coordinated development of both can we move from the realm of necessity to the realm of freedom.

4. Approaches to Conducting Scientific Research in the Process of University Teaching

In general, our scientific research is closely linked to teaching—it is an active and conscious act of exploring teaching using scientific theories, with the purpose of serving teaching work.

So, how can university teachers engage in scientific research while conducting teaching?

As researchers, the most important prerequisite is to have a "sense of problem." Without a sense of problem, there can be no scientific research. Therefore, we believe that discovering problems is an ability—an extremely important one. If we cannot discover problems, we cannot analyze or solve them; only by discovering problems can we possibly analyze and solve them. The process of analyzing and solving problems is the process of conducting scientific research. Albert Einstein once said: "Raising a problem is often more important than solving it."[8] This is indeed true.

The sense of problem is the lifeline of scientific research. For university teachers, it is not that we do not encounter issues related to scientific research; the key lies in whether we have a pair of sharp eyes to discover them.

Where can we find research problems? In fact, problems exist everywhere in the teaching process. For example: problems encountered in lesson preparation, puzzles arising in teaching, innovative ideas generated in discussions, sudden insights from reflection, experiences gained from learning, inspiration derived from communication, methods found in work, laws discovered through analysis, and experiences summarized in talent cultivation... Many more aspects can be listed. As long as we are attentive, we will surely discover many issues worthy of research.

"Action is the starting point of knowledge, and knowledge is the culmination of action." The key to scientific research lies in thinking—thinking is the key to unlocking the door to wisdom; the key lies in cognition—cognition is the sharp blade that dissects the core of things; the key lies in

action—action is the oar that carries us to the shore of the ideal state of the unity of knowledge and action!

How can a scholar reach the shore of the ideal state in academic research? The master of Chinese studies Wang Guowei said: "Those who have achieved great undertakings and profound scholarship throughout history must pass through three realms: 'Last night, the west wind withered the green trees. I climbed the tall building alone, gazing at the endless road ahead'—this is the first realm. 'My belt grows looser, yet I do not regret; for her, I am willing to endure all hardships and grow haggard'—this is the second realm. 'I have searched for her a thousand times in the crowd; suddenly, I turn my head, and there she stands, in the dim light'—this is the third realm."[9]

In the first realm, a scholar often faces difficulties in academic research, unsure of the direction, feeling confused and perplexed, yet still deeply committed. Thus, they climb the tall building alone, gazing at the endless road ahead. This stage of confusion yet unwavering perseverance is experienced by most scholars—it is a painful yet dedicated starting point. At this stage, one may not have laid a solid foundation for research, determined the direction of research, or accumulated research experience; research is like "testing the waters" or "looking for rice to cook." In the second realm, once a scholar identifies their goal in the pursuit of academic research, they will wholeheartedly commit to it, striving toward their ideal goal at all costs—even if it means growing thinner, looking haggard, or exerting great efforts, they will not regret it. This is a stage where, after extensive exploration, the main research direction is clarified, and research gradually enters a prosperous phase—it is a stage where one is about to see the rainbow after experiencing wind and rain. In the third realm, after countless trials and refinements in academic research, a scholar's knowledge reaches maturity and perfection; those who attain this realm have a profound insight similar to "climbing Dongshan and viewing Lu in its entirety, climbing Mount Tai and viewing the world as small."

Can university teachers reach this realm? The answer is yes. Most teachers in institutions of higher education, including vocational colleges, hold postgraduate degrees and possess a certain foundation and practical ability in scientific research. Therefore, it is feasible for them to engage in scientific research in addition to teaching. Initially, research can start with simple tasks, such as keeping teaching diaries, reflections, or collecting cases, accumulating first-hand data, and raising questions. Since we have chosen the profession of university teachers, we must consciously shoulder the two major missions: not only do a good job in talent cultivation by "imparting knowledge, teaching skills, and resolving doubts," but also conduct corresponding scientific research. We should seize every opportunity to summarize the experiences and lessons in teaching and educating people. A journey of a thousand miles begins with a single step—if we persist in our efforts, we will surely usher in a harvest season!

5. Conclusion

As the saying goes: "For educators, there is no end to learning; for scholars, there is also no end to pursuit." On the path of talent cultivation and scientific research, only by "studying extensively, inquiring carefully, reflecting deeply, distinguishing clearly, and practicing earnestly" can we reach the ideal state of perfection.

University teachers should "learn from and carry forward the noble spirit of outstanding teachers such as Comrade Huang Danian," "cultivate moral integrity, dedicate themselves to scholarship, and pursue innovation"[10], uphold the craftsmanship spirit, and "provide strong talent and skill support for building a great modern socialist country in all respects and realizing the Chinese Dream of national rejuvenation."[2]

The 20th National Congress of the Communist Party of China has sounded the clarion call to "unite and lead the people of all ethnic groups in building a great modern socialist country in all respects, achieving the Second Centenary Goal, and advancing the great rejuvenation of the Chinese nation through Chinese-style modernization."[11] We educators should carry forward the craftsmanship spirit, cultivate talents and conduct scientific research with the selfless and dedicated craftsmanship spirit, and pave the way for China to achieve the Second Centenary Goal. The new

era is calling us—we should, with the quality of "holding a sincere heart and taking away no single blade of grass," and with a sense of urgency, forge ahead unremittingly in talent cultivation and scientific research!

To respond to the call, keep pace with the times, cultivate a new generation of outstanding talents with both moral integrity and ability, and realize the grand blueprint of national rejuvenation and building a world power in science and technology at an early date, university teachers must live up to their youth, "unite as one, work with one heart and one mind"[12], work diligently, and create a better future.

References

[1] State Leader. Vigorously Implementing the Strategy for Invigorating China Through Talents in the New Era and Accelerating the Construction of a World - class Center for Talents and Innovation Highland[J]. Qiushi Journal, 2021, 24,10.

[2] State Leader. Important Instructions on Vocational Education Work[Z]. XINHUANET CO., LTD., 2021 - 04 - 13.

[3] JASPERS K T. What Is Education[M]. Beijing: Sdx Joint Publishing Company, 1991,56, 149.

[4] LI Bin. Sculpting the Quality of the Times with the Craftsman Spirit[N]. People's Daily, 2016 - 04 - 30.

[5] HAN Yu. Reply to Li Yi[A]. Anthology of Prose[C]. Shanghai: Shanghai Ancient Books Publishing House, 1997,134.

[6] SI Maqian. Records of the Grand Historian · Biography of Sima Xiangru[M]. Wuhan: Chongwen Bookstore Co., Ltd., 2009,679.

[7] DAI Sheng. The Book of Rites[M]. Shanghai: Shanghai Ancient Books Publishing House, 2016, 414.

[8] EINSTEIN A, INFELD L. The Evolution of Physics[M]. Shanghai: Shanghai Science and Technology Publishing House Co., Ltd., 1962, 68.

[9] WANG Guowei. Comments on Ci Poetry[M]. Shanghai: Shanghai Ancient Books Publishing House, 2009, 28.

[10] State Leader. Reply to Representatives of the Huang Danian - style Teacher Teams in Universities Across the Country[Z]. XINHUANET CO., LTD., 2021 - 09 - 09.

[11] State Leader. Report to the 20th National Congress of the Communist Party of China[J]. Qiushi Journal, 2022, 21, 14.

[12] State Leader. Drawing Lessons from History, Forging Ahead into the Future, Working Diligently and Forging Ahead Courageously[J]. Qiushi Journal, 2022, 1, 11.