

The Exploration of the Relationship between General Higher Education and Vocational Higher Education in China Based on Lumann Theory and a Proposed Route to the Transformation of Chinese Higher Education

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Abstract: *With the deepening of the supply-side reform of economy in China, Chinese higher education are required to follow the speedy pace with efficient preparation of the pool of professionals ready for the restructuring and upgrade of different industries in Chinese economy. However, it is impossible to fulfill this purpose if the long-time disputed relationship between general higher education and vocational higher education in China cannot be timely straightened out. Based on Lumann theory, with the help of documentary analysis and literature study, this paper aims to explore the relationship of the two types of Chinese education, focusing on the evolution of the relationship from inequality, through equality, to harmonious co-existence with partially or completely integration with each other at different settings in the great context of present Chinese economic reform. Consequently, the chronologically logical exploration can lead to the conclusion that the present reform of Chinese higher education largely relies on how to deal with the relationship of the two types of educations in China, significantly providing a practical route for the present transformation of the majorities of Chinese local colleges and universities from the academy-oriented to the application-oriented.*

Keywords: *Chinese higher education, general higher education, vocational higher education, relationship, inequality, harmonious integration, Lumann Theory, transformation of local colleges and universities*

1. Introduction

“Historically, vocational education and higher education emerged from opposing traditions, with the university producing systematic scientific knowledge, and vocational education training for specific occupations (Maclean, 2007). Accordingly, university outputs were evaluated on the basis of their contributions to the respective scientific discipline (Klüver 1995, cited in Maclean, 2007) while vocational education outputs were concerned with the ability to undertake useful work (Ibid). For the relation of the two oppositions, different countries vary from each other. For example, in Germany higher education is more vocationally oriented than in the UK and vocationalisation is more related to the development of specific skills tied closely to a particular occupation. In the UK particular higher degrees are more oriented on the development of individuals’ general and transferable skills (Hoelscher, 2005, cited in Maclean, 2007). The higher education segment of the Chinese education system carries aspects both of the US and the UK systems with a stronger affiliation to the US system. In the past decades, vocational colleges and universities were seen as two distinct and rather unrelated educational worlds. Those who opted for VET(Vocational Education and Training) were persons with lower academic competence, not really with an inclination towards practical, down-to-earth and technical and/or manual learning, but with no other choices(Jan, 2020). Students who opted for university aimed to achieve qualifications which would earn them the title of medical doctor, lawyer, engineer, manager, economist, etc., and label them as ‘elite’ in the society. The visible division in China is often linked with two origins. It partly originated from Chinese feudal tradition with the great respect towards scholars or intellectuals who often have the chance to enter into the upper class through the pass of the imperial examinations and with the great contempt for craftsmen, often referred to as persons of the

lower class (Bi, 2021). The feudal residue still remains in the minds of populace in today's Chinese society, especially for students' parents, the majority of them often make the decision on the career choice in place of their children, often from their loft desire for family reputation or the chance to climb on the top of the society ("The Goal of Vocational Education Is Not to Cultivate " Pseudo Elite ", 2015). On the other hand, the division lies in the fact that in the past decades, Chinese higher education has long been the stronger affiliation to American education system (Fang, 2011). The affiliation lays more emphasis on the academic education than the vocational education and training. The affiliation also puts more emphasis on disciplinary-orientation instead of interdisciplinary-orientation. The inclination has been lasting for many decades. It leads to closing the door to the integration of different disciplines, especially to the integration of a certain discipline and its corresponding profession, leaving graduates only with the accumulation of disciplinary knowledges and without real competence required by the profession. The inclination also misleads different levels of colleges and universities to the false policy of recruiting new teachers. The policy puts too much emphasis on the purity of the new teachers' degrees. The purity requires the consistency of bachelor degree, master degree, and doctor's degree, only with the same major or discipline through the three degrees. This further leads to the "war" for new teachers with high degree and title but only with academic competence without practical competence involved with industry or profession. The situation has been worsening to the battle for ranking as one of famous universities in China. The battle leads to the mandated transformation by Chinese government ("Notice of the State Council on Issuing the National Vocational Education Reform Implementation Plan," 2019). Too much focus on academic orientation makes many colleges and universities as sandwiched in the impasse of their development. Upward, they cannot reach the reputation of the worldwide or first-rate colleges and universities; downward, they cannot prepare graduates for the market or industry, leaving a great number of students unemployed. Moreover, the inclination of too much orientation on academic education is increasingly widening the gap between general high education and vocational higher education in China. At the crucial moment, along with the reform in the supply side of Chinese economy, Chinese government asks the majority of Chinese colleges and universities to be transformed into application-oriented one. This means it is high time for Chinese government to strike the balance between general higher education and vocational higher education, and seek to bridge over the gap between them.

2. Bridging over the Gap between General Higher Education and Vocational Higher Education

2.1 Lumann's Theory as Conceptual Basis for Bridging over the Gap

Theoretically, though the tendency of getting closer together of general higher education and vocational higher education and the tendency towards the balance of the two types of educations are linked with the different contexts, it varies from countries in different regions in the world. However, based on Lumann's theory, it can still be analyzed to explore the key factors involved. In 1984, Lumann used self-organizing (autopoietic) system to theorize society. In this theoretic setting, industry needs have to be satisfied by the development of personal skills by means of university education. The satisfaction has to be harmonized through the function of stabilization in the time dimension. In terms of functional differentiation, reflexivity, and self-organization, the dynamics of the self-organizing system is developed through communication. Thus the relation between social communication system and 'individual consciousness systems' (as Lumann called) are structurally coupled. In this system, social communication system, actors (individuals), messages (actions) are all essential without one of them, leading no communication. For different actors and social communication system, the meaning of the action is different because they are all different systems involved. Through interaction, systems can exchange information by means of the action. Then the social system has its own dynamics and gradually, universities could thus be harmonized with the market economy (Lumann, 1984 cited in Maclean, 2007). According to this theory, balances are needed for particular social conditions. Though purposes and requirements are different from each other, general higher education and vocational higher education respectively fulfil their purpose to meet different requirements from their own professions. No matter how social-economic situation changes, there always exists a balance between the two types of educations. All shareholders such as employers, employees, TVET (Technical & Vocational Education & Training), HE (Higher Education), and government forms an ecosystem, contributing towards the process of achieving a new dynamic equilibrium. In this ecosystem, when there is stability there is equilibrium. However, when there is a disruption or disturbance to the equilibrium of an ecology, agents responding by adapting, new balance is stricken (Maclean, 2007). In China, the present reform of economy in the supply side is a particular condition with all shareholders involved, including general higher education and vocation higher education. It means the relationship

of balance, though unequal to each other with one superior and the other inferior, is broken. The action of adapting comes to respond the new situation with the aim to strike the new equilibrium. The economic structural reform results in the reform of education including general higher education and vocational higher education. Without corresponding reform in the supply side of education, talents with personal skills required by market, cannot be prepared. This is the representation of social communications, interactions, and exchanges among all agents involved for the same purpose of the harmonious ecosystem.

Status-wise, though in the end new balance is achieved, historically, general higher education and vocational higher education have different positions. It is special true in China. In the past decades from the foundation of People's Republic of China, through the reform and opening up, to now, general higher education is obviously higher than vocational higher education in status. The inequality between general higher education and vocational higher education exerts the very negative influence over the economy and society. On the one hand, talents required by the market cannot be educated and trained equally or in proportion to the contributions of the two types of educations to the development of industries; on the other hand, the inequality seriously influences the social communications, interactions, and exchanges between them, leading to the fact that two types of educations borrow nothing from each other, even despise each other. In this situation, the room for the development of vocational higher education is narrowed down to a very small space. No excellent students are willing to attend it if they have another chance. Which type of educations they choose not simply shows their education but symbolizes their social identity. The channel for majorities of students to general higher education has long been closed, leaving no way to their glorious life with great respect by society. It is not a normal phenomenon. This is an abnormal ecosystem. In terms of economy, something wrong happens to the structure of Chinese education. The structure cannot meet the demands of the times of a globalization and an age of 'Internet Plus', especially cannot meet the demands of competitions arising from the times' change. It requires the education system to be re-oriented from education for socialization into the national culture, with the aim of being the development of a common polity, to the preparation of learners to live and work in a market-oriented or 'competition' state. The competition state serves as a means for global market and needs talents with skills, especially the skills of employment. Thus vocationalization is greatly supported for its functional fulfillment in this respect. It can empowering individuals through the development of their capabilities and through providing them with an opportunity to orient and adapt for the work environment. 'Humanitarian university education' does not serve the demand for instrumental knowledge and specialization, formulated by the so called 'knowledge society', not mention to today's 'Information Society' characterized by mobile internet. The competition is more strong and drastic than ever before. Both a country and an individual have to be empowered with competence. Obviously, a little bit affiliated to American humanitarian education (Fang, 2011), owing to too much emphasis on academic education, Chinese universities fails to provide enough and proper talents for the increase in the national competence, especially for 'Chinese Brand' to go to the world. Naturally, vocational education steps onto its own stage. In 2019, Chinese government issued "National Vocational Education Reform Implementation Plan" ("Notice of the State Council on Issuing the National Vocational Education Reform Implementation Plan," 2019). In the plan, vocational education is promoted as equal to general education. The promotion does not mean the status shifting from the inferior to general education to the equal to it but also means the new strategic role endowed by Chinese government to foster practical talents for facing the challenge, internal and external. The significance of re-orientation of Chinese vocational education is far-reaching, not only for vocational education itself, but for the whole educational system, and even for national economy, society, and culture. It also shows that in a new social condition, the past balance with the status of vocational education as inferior to general education has to be broken by the new reality in China. Today's promotion of the status of vocational education serves as the adapting with the aim to establish the new equilibrium beneficial to the development of all aspects in present China.

Structurally, through the adapting, compared with the past structure, the present one of Chinese higher education has changed dramatically. Horizontally, it consists of general higher education and vocational higher education equal to each other. The two types of educations are clearly divided, not simple the replacement of the past name 'higher vocational education' with the new name 'vocational higher education', but the change in the structure of education. The division endows the two types of educations with different functions instead of which of them is superior or inferior as in the past. They all serve their purpose for the provision of different talents for the development of economy and others in China. To great extent, the present vocational higher education even plays more important role than that of general higher education, especially the role in the transformation of the majority of academic-oriented colleges and universities into application-oriented ones. Vertically, Chinese higher

education consists of three types at present: academic oriented education, application-oriented education, and vocation-oriented. The division is the result of the reform of Chinese higher education in the supply side. With the division of three types of educations, Chinese colleges and universities can find their own trajectories for preparing talents for the industries in China. The division also makes all colleges and universities do what they should and can do instead of dreaming about something far from their own reality and the reality surrounding them. In other words, only based on what talents are required by vocational fields these colleges and universities can achieve their development, which is decided by the market, not by their intentional design. The three types of educations are also not the division of levels of education but the categorization of Chinese higher education (Yu & Chen, 2021). The categorization can greatly meet with demands from different student. It can make students choose the best for their successful career and life. This really means the realization of the function of education. Within vocational higher education, its structure is also changed drastically. Horizontally, vocational colleges are made of different majors with their own characteristics, either specific-related or local-related. They often exert great influence over many key industries or the development of the local economy. The division of vocational higher education based on majors, is very linked with the division of industries in the market. This division can make all vocational colleges play their strength to the fullest, not only providing technical workers but advanced experts in some fields. Vertically, in terms of status, vocational colleges are divided at the following levels: average colleges; model schools, key schools, and quality schools, and 'Double-High -Projects schools. This is the distribution of vocational higher education with different colleges staying at the levels in line with their own missions, potentials, established facilities, and orientation in the development in the local economy. In terms of degree, all colleges can be divided into short-cycle colleges without degree, undergraduate colleges with bachelor of professional degree, and vocational universities with bachelor, master, and doctor of professional degrees. The description of the two-line structure of vocational higher education above shows that in China, in the process of Chinese higher education, vocational higher education gains the same status as higher education. Systematically it means vocational higher education has a healthy body to face the challenges within and beyond Chinese economy. Obviously, the structural adjustment of Chinese higher education and the change in the structure of vocational higher education are the result of the social communication, interaction, and exchange within the greater ecosystem of Chinese economy and society. The process of the change is greatly speeded up by Chinese government with the implementation of macro-and-micro-control. The prehistoric change in nature of the structure of Chinese education cannot happen without government's great efforts because no other parties involved has the energy to revolutionize the traditional educational system at such a large scale. In some sense, it means the reborn of Chinese higher education with general higher education and vocational higher education harmonious with each other.

In term of enrollment, in the past, there is only one 'National College Entrance Examination'. Students are distributed into different levels of higher education. Excellent students with the high score of the examination go to colleges and universities with bachelor degrees. Average students with lower score have to go to colleges without bachelor degrees (Xiong, 2016), often called as short-cycle schools. The former one focuses on the education of academic talents. The latter one focuses on the education of professionals needed by different fields or industries. Obviously, vocational colleges lies at the level inferior to general education-oriented colleges and universities. It means the latter ones can only enroll students with low score or students with high score but refused by the former ones. This makes vocational higher education lose its own identity and leave little social recognition, also the students in the enrollment with no social identity and recognition. Though with great reforms made by Chinese authority, other means such as separate enrollment, independent enrollment, and counterpart enrollment are introduced, the dependence on 'National College Entrance Examination' is still a little bit strong. The enrollment of vocational colleges can start only if colleges and universities with bachelor degrees finish theirs (Yuan & Gao, 2019). It means that though the status equal to general education is accepted by law as mentioned in the section above, the further reform in the enrollment of vocational higher education is needed to be strengthened. In 2014, the promulgation of the Implementation Opinions of the State Council on Deepening the Reform of the Examination Enrollment System made great breakthrough in this respect. It suggests the very beginning of the classified enrollment examination in higher vocational education. In the National Vocational Education Reform Implementation Plan at the beginning in 2019, vocational national college entrance examination was proposed. Seemingly, it is only a step to complete the system of vocational higher education. In fact, it is a great leap in shortening the gap between vocational higher education and general higher education, making vocational colleges with the equal enrollment examination system to choose students instead of taking those refused by colleges and universities with bachelor degrees. It is a concrete way in reality to break the bottleneck of the development of vocational higher education, especially the independent

enrollment examination system. This system makes vocational higher education get away from the attached status with general higher education, changing the traditional concept that vocational education is inferior to general education (Hu, 2019). In 2020, some provinces such as Shangdong, Sichuan, etc., have issued official documents to push forward the implementation of this system. The separation is not really away from general higher education, but the really independent development. Once independent, vocational higher education can actively get close to general higher education, jointly establishing harmonious ecosystem with it. In this ecosystem, they can benefit from each other based on social communications, interaction and exchange, not only for themselves but for the development of Chinese higher education. They are only two sides of Chinese higher education just like those of a coin. Its independence aims to get better co-existence in the ecosystem, not really far away from each other but the prerequisite for the equally mutual relations of both parties, especially bridging over the gap between them at present. For all shareholders involved it is an urgent need to meet with the great expectation from the populace and the reality at the context of the present reform in supply side of Chinese economy. It is also a great challenge for all parties to explore an appropriate way with their innovations. Admittedly, it is not an easy job but deserves all parties' efforts to get involved. As a response to the challenge, the following section proposes a roadmap as the representation of the development of the relations of the two types of educations in Chinese higher education at present and beyond.

2.2 Immersion and Integration as the Strategies for Bridging over the Gap

In order to find the roadmap for the future relation, the past and present relations between general higher education and vocational higher education have to be straightened out. As the statement in the former sections, in the past decades, vocational higher education and general high education in China are opposing to each other and the former inferior to the other. The relation of the two can be shown as the following figure.

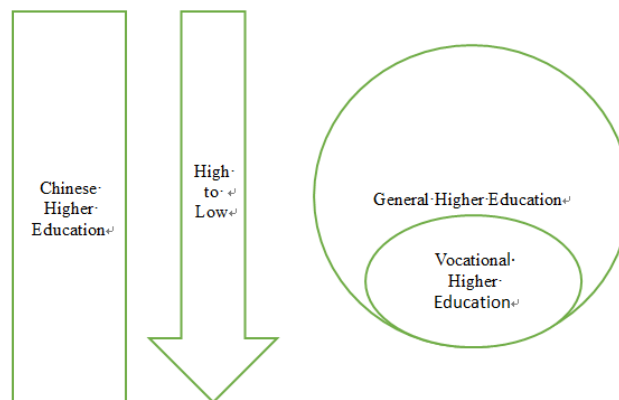


Figure 1: The Relation of General Higher Education and Vocational Higher Education in the Past

In the figure above, Chinese higher education obviously shows its order of levels from the high to the low. It consists of one part with vocational higher education as the one subordinate to it. Moreover, compared with the rest of general higher education, vocational higher education makes up a small corner of the whole. Its position in the Chinese higher education is self-evident.

On the contrary, at present, Chinese higher education has been intentionally put in the horizontal instead of the vertical. Moreover, general higher education and vocational higher education lives with each other equally as shown in this way.

However, in the figure above, when independent, vocational higher education is equal to general higher education. Different from that in figure 1, Chinese higher education consists of vocational higher education and general higher education, instead of only one party. The two constituents of Chinese higher education are independent from each other, no obvious intersection between them. Such a relation is partly because at the beginning of the establishment of independent identity, vocational higher education works the greatest energy into its own construction, such as the mission, structure, and systems, etc. it focuses on the internal construction, still on the way to copy and imitate general higher education in every respect without any interest and more energy to care about how to live with general higher education harmoniously. This is also the way for anything to emerge from the weak. Only if it is strong, it has the equal position to negotiate with and exchange from others, as Lumann theory says in

former section above. In addition, in the figure 1, the relation of the two educations is one-way descent from the high to the low. The two are only two extremes, not at the same hierarchy. However, in the figure 2, the relation of these two, is not one-way but two-way, equal to each other. This foresees the future development of the relation of the two.

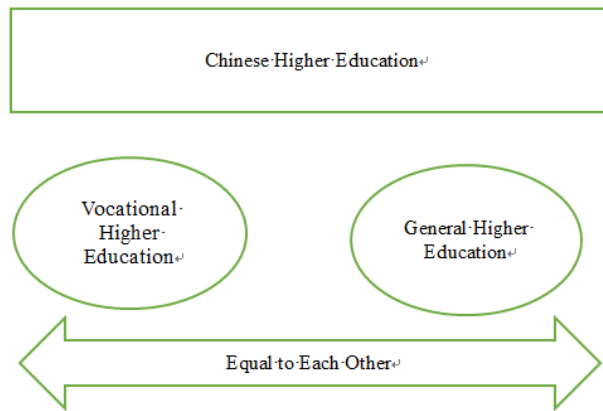


Figure 2: The Relation of General Higher Education and Vocational Higher Education at Present

Following the tendency described above, after long-time copy and imitation, once vocational higher education gets stronger and stronger, especially after it has a clear complete realization of its mission and function in the development of national economy and society, it really steps on the way to the independent development. Its unique advantages work its great courage to have a conversation with general higher education, namely the reaction or communication with higher education. The equal exchange for what they want for their own development is the main melody. The win-win relation of the two parties leads to a harmonious ecosystem, Chinese higher education. Based on Lumann's theory (1984) and Yuan's (2018), the elements of the ecosystem and the relations of them can be shown in the following figure.

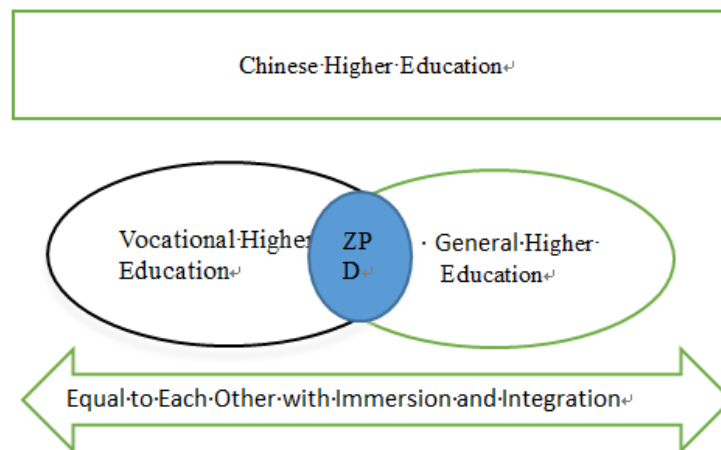


Figure 3: the Relation of General Higher Education and Vocational Higher Education with the Intersection (ZPD) in the Future

In the figure 3, when the two types of educations get close, staying in a balance with the stable intersection (ZPD). The ZPD is originally a midway for learners to transit from the previous learning to the future learning (Kiraly, 2000). Here borrowed, it serves as a middle place for the two educations to do their social communications, interaction, and exchange between them. When the two come nearer to each other and finally get into their counterparts, with great passion and energy, they absorb what they need as possible as they can. This process is immersion because only a relatively small part of one comes into the other, the majority of the two still keep their own identities. When they absorb enough, they first digest and then integrate what they get and what they own. Significantly, the ZPD is just like a stove for the two educations to immerse and integrate with each other. The chemical reaction happening in the stove brings too many benefits to each other. For general higher education, vocational higher education can provide some information very linked with different industries, finding a way to

how the research results can be transformed, even becoming a place for them to be hatched. For vocational higher education, owing to the historic reasons and its own nature, lack of theoretical supports, it is long-time limited to the low end, leaving itself inferior to higher education. Within the ZPD, it will get the theoretic support from general higher education. This is beneficial to the two parties. More importantly, after the reaction of the stove of ZPD, something new and meaningful can be found and gives the great enlightenment to them. The ZPD serves as the zone for testing, incubation, and innovation, especially a good place for the practice and research with transdisciplinary. More significantly, relation of the two types of educations can provide the theoretic basis for the conceptual framework of the types of specific institutes responsible for the two types of educations. The framework can be shown as the following figure.

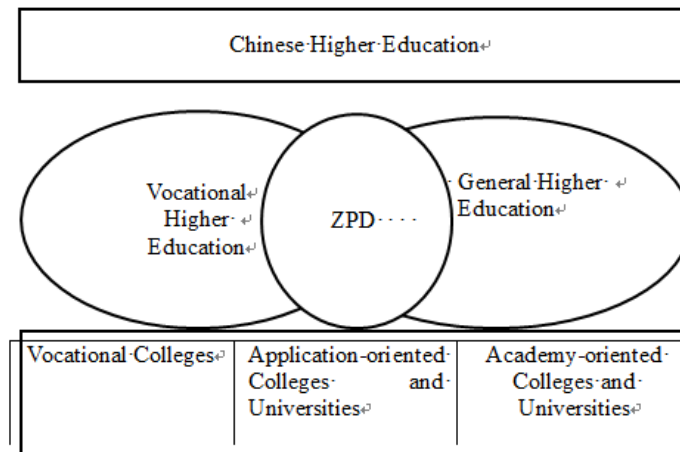


Figure 4: The Conceptual Framework of the Institutes of Chinese Higher Education

In the figure 4, the ZPD is very different from that in figure 3. The first difference lies in the size. Obviously, the ZPD is much bigger. It is partly because of the increasingly moving towards each other. The second difference lies in the nature. With the long-time immersion and integration, ZPD develops as a special zone with the combination of the two educations, more importantly and significantly with the new nature and function of its own, not from the two. It grows from the two, but not limited to the two. In this sense, the whole Chinese education seems to be divided into three types: vocational higher education, ZPD, and general higher education. The ZPD here has been given a name of application-oriented education. This is the logic representation of the relation of the two educations at a new Chinese context. This is also why Chinese authority require the majority of Chinese colleges and universities to be transformed into application-oriented colleges and universities (Li, 2019). This is the result after Chinese government has fully realized the change in the relation of the two educations in the context of Chinese economy. After the transformation of the majority of colleges and universities, the original layout with only two types of colleges and universities changes into the one with three types of colleges and universities. More differently, the proportion of the three types is characterized with vocational colleges and application-oriented colleges and universities as the main body. In the main body, application-oriented colleges and universities is the main one of the two. The special main body consists of vocational colleges and these colleges and universities by transformation from academy-oriented ones. The two types of colleges and universities get together in the stove of ZPD, and react chemically to each other by the means of immersion and integration. In the end, they develop as new types of colleges and universities with Chinese characteristics. The third difference lies in the function of ZPD. Not just like in the Figure3, the present ZPD plays more and more important role in the structure of Chinese higher education. Though only one of the three, it can control the whole situation because it cares about the main body of the education of talents quantitatively and qualitatively.

3. Conclusion

From the detailed exploration based on Lumann theory above, one fact can be obviously shown that for Chinese colleges and universities, especially for the average ones, the formation of the present relation of three types of educations gives them the realistic roadmap for the further development. Everything has to be based on its reality, especially the position in the relations instead of the fantasy of

being promoted from the lowest levels of colleges and universities to the highest level all at once. They have to understand they are classified as different types of colleges and universities with the corresponding education orientation or mission in the context of China's reality, not divided into colleges and universities at different levels from the low to the high. This lets all of them go back to their original mission of the education of talents instead of perusing the ranking as the world-class or the key one among all Chinese colleges and universities. This also leaves the ZPD as the very topic of the relation of vocational higher education and general higher education for researchers to contribute their efforts to the research of exploring its value and the application in reality.

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