

Significance of “3+3” The Elective Subject Test System for College Entrance Examination Reform in China

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Abstract

Due to previous college entrance examination system, high school students' focus has been more centered on obtaining high test score which led to forgetting about each student's personal differences and academic imbalance. According to this speculation and for other reasons, the idea of the new elective subject test system has been initiated in Zhejiang and Shanghai as a pilot stage. The New College Entrance Examination Selection System or in other words Elective Subject Test System is instead having to choose between two sets of exams (previously arts or science) students became able to choose 3 elective subjects (physics, chemistry, biology, geography, politics, history, and general technology). This paper is aimed to study elective subject test system in deep meaning, to have a better understanding of its purpose and its significance through previous literatures done by some researchers. The paper introduces and gives brief idea about college entrance examination, addresses the need for new college entrance examination reform in China and furthermore, discusses about the new elective subject test system. The issue of high school management and subject choice imbalance have been concerned. Future research is encouraged to be conducted regarding impacts of the elective subject test system.

Keywords–*Elective subject test system; College entrance examination reform; Diversity; Individuality; Choice; Quality education*

I. INTRODUCTION

College entrance examination, national college entrance exam or commonly named as Gaokao in China is taken by millions of Chinese students every year. Taking the exam is the only opportunity for students to enter universities or colleges. College entrance examination is a crucial part of education system in any country. It is considered as a tool to assist higher education institutes to bring up and prepare qualified talents into society. The

unified national entrance exam possesses the merit of being authoritative, scientific, and highly efficient (Liu. H, 2013). At the same time, college entrance examination has its limitations that certainly need reform. The beginning reform of college entrance examination date back to 1952 when National Matriculation Tests Policies was newly formed. Ever since then, the system has been going through revolutionary path with continuous reformation on structure and content of the exam. From 1977, the examination started to get conducted at provincial levels. Since 2010, Chinese government's focus on the examination system became more widened. It showed great necessity of examination reform that needs to be done. Moreover, in this present time of China, higher education became much more demanding and requires for that change. Due to intense competition for top notch university and demanding major in the society, certainly there will be no sign of university admission lessening. It has been criticized that colleges and universities are given limited enrollment autonomy and does not expand students' right to choose. For exam, except Chinese language, Mathematics and Foreign language (from English, Japanese, Russian, German, French, Spanish), students must choose between Social Sciences (political science, geography, and history) and Natural Sciences (physics, chemistry, and biology). This led them to prepare for the selected subjects and not focus on other classes. People putting too much importance on college entrance examination always had drawbacks of harming the quality and balance of education, which calls for reform to happen.

The State Council (2014) published the official document for directing the national college entrance examination reform in 2014 and appointed provinces to adapt the reform based on local context. Since 2014, the first steps were made in Zhejiang and Shanghai, for the purpose of getting students' final scores with the help of plural

examinations. Students who participate in the college entrance examination are required to take Chinese language, Mathematics and Foreign language for the test. Students also choose three subjects from physics, chemistry, biology, technology (Zhejiang only), geography, politics and history. From 2017, Beijing, Tianjin, Shandong, Hainan started to implement this system. Since 2018, 7 Chinese provinces and cities began to adapt this program. All the issues related to college entrance examination are big concerns to students, their parents and teachers. The pressure of exam preparation highly influences the development of secondary school students. The national college entrance examination has been criticized for leaving students with knowledge gaps due to differences in humanities and science tracks, where students choose one track and do not take any courses in the other (Zhang, 2016). Reforming college entrance examination is to introduce system that can adapt and fit into the certain country's culture or unique characteristic. Pilot reform of college entrance examination is based on the national top-level design framework and deeply integrated with the conditions of Zhejiang and Shanghai, especially the characteristics their current educational development. It has developed a model that not only reflects those characteristics, but also provides a reference and promotion model for deepening the reform of the national examination and enrollment system.

The objective of entrance exam reform is to establish a college admissions test that is based on a unified examination and would assess students' abilities, appraise them on multiple levels and classify them (Liu. H, 2013). Although, the purpose of college entrance examination is to make possibilities for universities and colleges to admit students who are suitable and for students to enroll into their desired universities and colleges, the system should not show negative influence on students who are still going through their secondary education. Basically, it is suggested that abilities are assessed in unified exams but combined with system of diversity when it comes to the choice of test subjects. To encourage students to develop their own interests and superior disciplines and in order to break the long-standing problem of score-based cultivation of students at the basic education stage

in China, the function or purpose of China's academic examination system needs to be properly positioned. Under the strong leadership of the Party Central Committee and the State Council, and with the overall guidance of the Ministry of Education, the pilot reform has been consistent with the nation's top-level design of the comprehensive reform of the college entrance examination. It adheres to cultivating people by virtue and developing quality-oriented education (Feng, 2018). The new college entrance examination system emphasizes student centeredness by giving students the right to choose freely and highlights the teaching and selection concepts of teaching according to aptitude. Pilot reform of College Entrance Examination selection system fully respects the individual differences of students, but also faces important issues that needs to be studied. This paper is aimed to study "3+3" the elective subject test system from college entrance examination pilot reform in deep meaning, to have a better understanding of its purpose and its significance through previous literatures done by some researchers as main source. The paper goes on to introduce about college entrance examination in China, addresses the need for new college entrance examination reform in China and furthermore, discusses about the new elective subject test system.

II. COLLEGE ENTRANCE EXAMINATION IN CHINA

The college entrance examination reform is not only related to the cultivation of national innovative talents and the healthy growth of students, but also to the maintenance of social equity, the distribution of higher education resources, the redistribution of social benefits, and the maintenance of China's reform, development and stability (Liu. H, 2013). H. Liu (2013) highlighted ideology, principles, and policy recommendation for reform of the college entrance examination and viewed that a model and schedule that matches the elements of the society and level of education should be chosen with intention to implement the reform. One of the "four beneficial" principles which was mentioned is that college entrance exam system should have is the principle of being beneficial to the education quality of high schools. H. Liu proposed that a National Education Examination Law or National

Examination law and an integrated mechanism to supervise the exam should be formulated and suggested that reform maintain certain amount of stability and adherence to tradition. It has been suggested that reform of the foreign language portion of the exam should be introduced, meanwhile the regional fairness be promoted and moreover that colleges autonomy in admissions be increased in order to successfully promote reform of the entrance exam.

Ross & Wang (2011) predicted that China's culture of education is going to escalate in the short term as the college entrance examination is holding on to as a last bastion of meritocracy and is strengthened by the state's wish to. H. Liu (2014) put the college entrance examination system as the stabilizer and pressure relief valve of the society. It is related to the peaceful living and working of thousands of families, the long-term stability of the country, and the smooth realization of the goal of building a well-off society in an all-round way. Adhering to the college entrance examination system is conducive to maintaining the overall situation of China's reform, development and stability. The college entrance examination system has its limitations and drawbacks, but it is still the fairest exam at present. As far as China is concerned, the college entrance examination system is indispensable. You & Hu (2013) discussed about the conflict between diversification and equality when it comes to making changes in Chinese college entrance examination. They viewed that the diversification policy might harm equal chance of education even though they demand each other. It was criticized that previous reform was not able to eliminate the issue of test centered education. They suggested that due to government's heavy rely on college entrance exam to ensure equality, Chinese higher institutions do not operate independently. Xiong (2013) had a same opinion, suggested that Chinese universities need to become independent and autonomous to implement valuable college entrance examination reforms, strictly implement the college entrance examination reform defined in the "National Medium and Long-term Education Reform and Development Plan Outline (2010-2020)". In the Outline, it is pointed out that the guiding ideology of the reform of the college

entrance examination is to break the lifelong test, promote the separation of examination and enrollment and basically suggested that government departments should hand over examination organization power to social institutions, enrollment autonomy to schools, and students to choose. Fan (2016) pointed out college entrance exam system has some drawbacks that have been criticized and difficult to solve the universal unity of the content and form of the college entrance examination has caused different levels and types of colleges and universities to be unable to select suitable talents for training according to their needs. The researcher expressed that China's high school education and teaching are facing many new opportunities and challenges. This reform will promote a fundamental change in the education mode of high schools. High school education will face the challenge of students' independent choice of study courses and examination subjects. However, the researcher expressed this kind of challenge will definitely make the development of students more individualized and characteristic and will certainly benefit the cultivation and development of innovative talents in China. In contrast, Zhang & Wang (2014) attempted to interpret the conflicting nature of the national college entrance examination policy regarding equity issues. They expressed that the national college entrance examination is among the highest influential policies of education system of China but also yet one of the most complicated policies related to education. The researchers suggested that reforms must mainly focus on how to improve the reliability of the design of independent examinations across different provinces, how to avoid independent recruitment policy that restraining education equity between different schools.

D. Liu (2017) concerned about whether student autonomy is promoted, academic pressure is reduced and scientific performance judgments are given. The researcher found that there are problems such as complexity, speculation and unreliability. In order to overcome difficult problems and resolve contradictions, the researcher recommended to scientifically set the requirements of college selection and examination, give play to the leading role of first-class universities, standardize high

school teaching management, improve the construction of the shift system, strengthen the concept of independent selection, and optimize the grading system. Xiong (2018) believed that the reform of university enrollment and training also directly affects the progress of college entrance examination reform and therefore secondary schools should attach great importance to the education of students' career planning and cultivate students' independent learning, independent management and independent planning abilities. Similar to Xiong's idea, facing the impact of course selection and shifting on school education, teaching, and management, Duan (2018) thought high schools should objectively analyze their own strengths and weaknesses and actively respond and adhere to the people-oriented principle, and promote the steady progress of the new college entrance examination reform by improving one subject and two exams, scientifically guiding the selection of courses, systematically carrying out career planning education, exploring large-scale enrollment, and strengthening general education. Jiang, Guo (2019) explored how to improve the college entrance examination system. According to them, the new college entrance examination should remove the unnecessary role of college entrance examination and only maintain its test function and education function, to gain the true elements of college entrance examination. They also considered that the college entrance examination better to take full account of students' potential and individuality and put importance to the development of colleges and secondary education and conduct various types of examinations. Zhang (2016) reviewed the history of national college entrance examination within the context of general educational development in China. The author strongly encouraged that design of reform or policy must be based on scientific research and proven evidence. Zhao & Liu (2019) focused on the value analysis and risk assessment and evasion mechanism of college entrance examination reform. According to Zhao & Liu, it must follow the requirements of democratization and scientification, actively attract relevant stakeholders to participate, provide them with opportunities to express their opinions, and then form a final plan that can be accepted by all parties through the collision of different views. At the same

time, it is necessary to achieve openness, fairness and transparency in the policy formulation process through various methods such as hearings, press conferences and so on.

The concept which was mentioned by almost every researcher is college entrance examination reform must be regulated scientifically for the sake of quality of education, but at the same time most of them did not forget the importance of cultural characteristic in China. The fairness, the equity and the diversification were the commonly raised topics among these researchers. According to them, equality for society and fairness in the test evaluation and moreover diversified choice of exam subjects are necessary in this new reform of college entrance examination. Next most mentioned issue was the independence of university and colleges from the control of government organizations. The authors suggested that the government should give universities and colleges more chance to operate on their own when it comes to the enrollment system. Furthermore, the idea of independent choice and individual learning seem to be brought up quite often.

III. REFORM OF COLLEGE ENTRANCE EXAMINATION

Most senior high schools tend to pay more attention to intellectual development than moral education, to test scores than students' development, thus neglecting students' individualized needs and living little space for students' independent learning. This was why the pilot reform college entrance examination system was carried out in Zhejiang and Shanghai in 2014 (Han et al., 2018). Tao (2014) studied that the practice of college entrance examination reform in the three provinces of Jiangsu, Guangdong and Zhejiang shows that under the basic system design that provides students with multiple combinations of examinations and free choice of examination subjects, whether they use original scores or standard scores or grade scores, the results have caused speculation and selection behaviors for students to seek refuge. This researcher viewed that through the adjustment of the entire examination system and the improvement of specific assignment rules, it is possible to partially eliminate or slow down the deficiencies of the grade assignment system, thereby making it

more scientific, reasonable and perfect. Liu & Li (2015) noted that in the context of building a harmonious society and striving to realize the Chinese dream, the college entrance examination reform must fully consider the general acceptance of the society and avoid increasing social contradictions and conflicts due to the college entrance examination reform. They named the reform which attracts the most attention and has the greatest impact as Shanghai and Zhejiang and moreover the reform in this area mainly highlights the scientific exploration of college entrance examination reform. Hu (2017) did study on the common objective of college entrance examination reform and high school new curriculum reform and praised that as a national pilot program, the reform of College Entrance Examination has significant meaning and far-reaching influence. This researcher concluded that both the college entrance examination reform and the new high school curriculum reform have been on the line and must be issued, but this is after all related to a major reform of education. Hu put forward the idea that without the reform of the new high school curriculum, there will be no basis for the reform of the new college entrance examination. At the same time, the reform of the new college entrance examination will inevitably promote the development of the new high school curriculum reform to a deeper and higher level. Whether it is an advocate of reform or an implementer of reform, there is a long way to go, and the road ahead is not smooth and may be full of thorns. This requires us to clarify our thinking, set goals, do every basic work down-to-earth, constantly discover new situations and new problems, solve problems while exploring, and gain experience. Bian (2015) made a comparative study on plan of college entrance examination reform between Zhejiang and Shanghai. The researcher conducted a comprehensive and profound analysis and comparison on the plan of college entrance examination reform between Zhejiang and Shanghai. It was thought that the existing diversified examination enrollment mechanism and high school entrance examination system have been deepened and the college entrance examination reform has laid a good foundation. Meanwhile, Wen et al., (2015) conducted investigation on the reform of Zhejiang

college entrance examination and they expressed the necessity for long-term structured approach. It was firmly reminded by Xiong (2016) that regarding the college entrance examination reform in Zhejiang and Shanghai, the state should form an expert group to conduct independent investigations and evaluations objectively and accurately evaluate the effects and problems of the college entrance examination reform. The progress made in the reform and also problems existing should not be ignored and the reform plan with huge problems cannot be allowed to continue to be implemented throughout the whole country. G. Sun (2016) said, in China, education reform is difficult, college entrance examination reform is even more difficult, and it is even more difficult to advance the college entrance examination reform trial. Therefore, there are some shortcomings and problems that urgently need to be paid attention to, carefully studied, and resolved. G. Sun sorted out the measures and progress of Zhejiang's implementation and the promotion of reform pilots, puts forward several issues that require high attention and continuous research, and prospects for the next step of advancing the pilot work. It goes as to maintain the strength of reform, to create a good environment, to speed up related supporting work to deepen the deepening of curriculum reform in high schools, to do a good job in education and teaching in colleges and universities.

Zhao & Liu (2016) clarified it is necessary assess the risks of college entrance examination reform requires. And it does not mean to deny of go against reform, but rather to be more careful for the sake of reform's development. Moreover, they expressed that reform is certainly encountering several risks and challenges. B. Sun (2016) attempted to study risk factors of Zhejiang new college entrance examination. The researcher identified risks such as cultural risks, social risk and political risks and proposed policy makers to take measures and noted that the reform in Zhejiang province has a very crucial significance for sake of reforms in other regions of the country. B. Sun views that although the college entrance examination reform is difficult to adjust and the risks of reform cannot be completely eliminated, as long as it's hot topic in society, the reform of the college entrance examination will be far-reaching

and long-lasting and will affect the whole body. Therefore, strengthening the risk prediction and prevention and control of the college entrance examination reform in Zhejiang, reducing risks as much as possible has great significance to the achievement of the expected goals, and the reform in other parts of the country. However, J. Zhang (2016) had a very distinctive opinion from other scholars. He strongly believed that education can only be gradually improved through social and historical progress and the overall reform of the education system and cannot be expected to be completely solved through a certain educational reform or change. X. Liu (2016) agreed that one of the basic original intentions of the new college entrance examination system design is to disperse the academic burden and test pressure to the entire high school stage in the hope of reducing students' academic burden and test pressure and stressed that the college entrance examination system itself is complex and sensitive, and the improvement of a certain system often leads to the disadvantages of the new system. The new college entrance examination selection system is undoubtedly more able to fully observe the differences in students' personalities. The author put forward that the reform of the new college entrance examination should pay special attention to the problems in front-line practice and the opinions of various stakeholders in the process of its advancement and strive to achieve both scientific and fair reform effects through strategic forces such as joint progress, public opinion promotion and target monitoring. X. Liu et al. (2017) further showed support by indicating that under the free selection system, the new college entrance examination selection system is a relatively scientific and reasonable system. They suggested to strengthen the interpretation and preaching of the college entrance examination policy, and guide students to form a more comprehensive and rational understanding, to create favorable support for deepening and perfecting the college entrance examination reform plan as much as possible. Qu (2017) wrote that the pilot programs in Zhejiang and Shanghai has been implemented steadily, some of problems were solved and expressed the results were satisfying and further encouraged that the understanding and grasp of the law of examination and enrollment must be

deepened, make effort to create a modern examination and enrollment system with Chinese characteristics more purposefully. Meanwhile, there are also some problems with the new selection design, two exams a year, and grade assignments. Han et al. (2018) published a paper focusing on the main content and main work of the reform of the college entrance examination in Zhejiang Province, analyzed the difficulties and challenges in the process of reforming the college entrance examination in Zhejiang Province, and showed the innovative practice and exploration of Zhejiang to adapt to the new college entrance examination. These researchers regarded that the reform of the college entrance examination not only echoes and promotes the deepening of high school curriculum reform in Zhejiang Province, but also makes the college entrance examination in Zhejiang Province shift to fair procedures, fair opportunities and fair content, which has had a profound impact on basic education in Zhejiang Province. According to them, the reform of the college entrance examination has effectively promoted quality education based on selective education thought, broke the boundaries of liberal arts and sciences, improved students' awareness of independent planning, choice of subjects and majors, and development goals, and gradually changed the basic education.

Yuan et al. (2018) analyzed the relationship between the perception of the new college entrance examination reform policy and the professional commitment of college students and the mediating effect of professional decision-making self-efficacy and learning motivation in Zhejiang province. Their results showed that the new college entrance examination reform policy perception has a significant positive impact on college students' professional commitment, professional decision-making self-efficacy, and learning motivation. They recommended to enhance students' professional decision-making self-efficacy and learning motivation at the micro level, strengthen the understanding and recognition of policies by stakeholders at the meso level, and further improve the new college entrance examination reform policy at the macro level. Another researcher Feng (2018) discussed about building a modern entrance examination system with Chinese characteristics taking Zhejiang college entrance examination

reform practice as an example and strongly emphasized that considering the new situations and new issues in the pilot program, Zhejiang gradually improved the examination system and that it has proved that the reform in Zhejiang is accurate, well-absorbed and productive. Supporting this idea, Cui et al. (2019) were optimistic about the new college entrance examination in Zhejiang Province and Shanghai Municipality and that their reform trends have attracted extensive attention from other provinces. Therefore, the simulation research and discussion on the guarantee mechanism of selected examination subjects in Zhejiang and Shanghai is not only for the pilot new college entrance examination policy, but other provinces, regions, cities can also use this information rationally to improve their own educational governance.

However, in contrast the author H. Liu (2019) also identified that in the pilot reforms in Shanghai and Zhejiang, the most prominent problem is that students tend to take refuge choices, resulting in a significant drop in the number of physical candidates. He figured that after five years of practice, it can be seen as the new college entrance examination has achieved great results, but also faces great challenges, and its pros and cons have basically emerged. Liu encouraged we should summarize and promote the positive aspects of the new college entrance examination, and at the same time analyze the shortcomings and lessons of the new college entrance examination based on facts, so that the reform of the new college entrance examination can maximize the advantages and minimize the disadvantages and play a greater role in promoting fair and scientific selection. Xiong (2018) suggests the direction of China's college entrance examination reform should be to eliminate the impact of score centeredness on the overall development of students, and to eliminate the shortcomings of one-testing for life. This requires increasing independent enrollment, "three-in-one" comprehensive quality evaluation and admission reform and striving to establish multiple evaluations system. "Three-in-one" or the Trinity (comprehensive evaluation of enrollment) refers to the important measures of college enrollment reform initiated by some provinces in the country. It is one of the four selection modes stipulated in the comprehensive reform of the college entrance

examination plan; that is, colleges and universities in the province have a certain percentage of enrollment quotas. Faced with the three types of scores of college entrance examination candidates in Zhejiang, including academic proficiency test scores, college entrance examination scores, and school comprehensive test scores, and the comprehensive scores are calculated according to a certain ratio, a form of admissions for candidates is selected. However, according to Cui et al. (2019) in the actual enrollment process, many provinces, regions and municipalities still mainly use the total scores of the college entrance examination to determine the entry and admission of candidates, and only a few regions use multiple rating indicators for admission. This method has wiped out the differences in the selection of subjects by students to a certain extent, causing students to chase the scores of the college entrance examination, and it might make colleges and universities lose their decision-making power after they have formulated the selected subjects. On the other hand, Duan (2018) expressed concern that with the deepening of the reform of the new college entrance examination, one subject and two exams have increased the burden on students, free choice of subjects and taking classes in classes have caused fluctuations in the order of high school teaching, career planning has made it difficult for students to choose, the function of distinguishing mathematics has declined, and physics has been coldly treated.

Pires (2019) criticized that by using college entrance examination as the only measure on enrollment to university or college, the education system of China has been determining the academic achievements based on only according to external judgement that puts importance on exam results, generates a great level of stress on schools, parents and students which leads to creating students with weak mentality and creativity. Jiang, Guo (2019) similar to others, agreed that college entrance examination plays a crucial role in higher education system and must be adjusted to current society's situation and put forward that the idea of basing solely on test scores should be changed. Most of the researchers agreed that this pilot reform of college entrance examination is impactful and also deepening the college entrance examination system. Meanwhile, some other identified certain problems

that need to be reconsidered and encouraged the further studies to be conducted.

IV. "3+3" THE ELECTIVE SUBJECT TEST SYSTEM

Q. Liu (2013) brought up the issue of students' load distributes as a barometer for their own physical and mental health and pointed out minimizing students' load is a time and labor-intensive mission so that the most important mission of education in the future is to reinforce students' toleration. Tao (2014) strongly expressed that improper positioning deprives students of their right to choose freely, and majority of students are forced to take vicious and competitive examinations in each subject, increasing the burden of work and test anxiety, and the longer the penetration of test anxiety, the duration of high stress may exceed the original college entrance examination plan. He suggested that a scientific and reasonable plan should guide students to give students the freedom to take a course without seriously compromising their subjects. According to the programmatic document of the new round of college entrance examination reform, "The State Council's Implementation Opinions on Deepening the Reform of the Examination Admission System," all college entrance examinations across the country have adopted the "3 + 3" compulsory examination plus elective subject model. As the first pilot provinces of Zhejiang and Shanghai, the former implemented "7 of 3" in the subjects of college entrance examination. Candidates were free to choose 3 subjects from the 7 subjects of politics, history, geography, science, chemistry, biology, and technology as college entrance examinations. Subjects, the latter implements "6 chooses 3" in the subjects of the academic entrance examination. Candidates can freely choose 3 subjects from the 6 subjects of politics, history, geography, science, chemistry, and students as the subjects for the college entrance examination. Yu et al. (2015) pointed out there is a connection between student majors and elective subjects, and there is also a connection between enrollment and training, which makes the college entrance examination reform. According to Liu & Li (2015) this reform will bring about obvious changes in increasing the choice of

students, the diversification of high school management, and the diversification of college admissions but will also face issues of balance and compatibility of selected subjects.

Luo (2015) studied college entrance examination liberal arts and sciences, foreign language examinations that is taken twice a year and the reform of the academic level examination system's impact on high school education and teaching. Originally, arts and sciences were divided into different subjects, and the teaching were fixed in accordance with the arts and sciences. The group of students in the same classrooms were basically fixed. However, after the implementation of liberal arts and sciences, the student groups and classrooms of different elective subjects became separate that led to increase of high school class management difficulty. Yu et al. (2015) made study from the perspective of colleges and universities, it systematically analyzes the setting of elective subjects in the new round of college entrance examination reform and puts forward the principles and specific issues that colleges and universities should consider when formulating elective subjects for peer reference. They revealed their confidence for this round of college entrance examination reform as it will undoubtedly have a huge impact on candidates, schools and universities and motivated that we need to further analyze, explore and practice. X. Liu (2016) stated that giving students the freedom to choose can basically take care of each student's personal differences. This is the most fundamental value of the new college entrance examination selection system. Fan (2016) also considered the new reform plan for the college entrance examination has greatly expanded the choice of subjects for the college entrance examination, giving candidates more opportunities to learn what they are good and test their strengths. This will further stimulate students' learning enthusiasm and initiative, promote the independent and diverse growth of talents, and stimulate the formation of students' innovative thinking. Zhu & Wu (2018) described that self-selection is to expand the right of students to freely combine their subjects, transforming "complementing shortcomings" education into "promoting longevity" education; and expanding the admission opportunities for

volunteer majors through "professional + school". Students' independent choice of college entrance examination subjects is of great practical significance to better realize their life development goals and value pursuits, and better plan their own way forward. It is also a key link to ensure the expected results of the new college entrance examination.

Moreover, Ying (2016) considered the reform has greatly reduced the government's direct allocation of resources, and no longer directly intervenes in the distribution of benefits among the enrollment relationship subjects. Instead, it adopts equal choices between candidates and colleges and equal competition between candidates and colleges and universities. The equal competition between the two achieves the maximum benefit and efficiency optimization of the benefit distribution. According to Huang (2017), in the combination of subjects, there are as many as 35 choices for candidates in Zhejiang and 20 in Shanghai. In the case of so many subject combinations, especially those candidates applying for the same major, there may be differences or even completely different, both Zhejiang and Shanghai have adopted a grade assignment system in the subject selection. Dong et al. (2017) analyzed the promotion of the pilot projects in Zhejiang and Shanghai, from the perspectives of the combination of selected subjects, teaching arrangements, inter-subject disparity and psychological impact on students, and the selection of subjects in colleges and universities. They distressed that due to the various conditions of the school, the combination of courses that high schools can offer is relatively limited and under the new combination of course selection, the entire school's curriculum, teacher arrangements, the basic elements of teaching management such as classroom arrangement are facing huge challenges. Moreover, it is indicated that only 33% of college majors have a clear sense of subject responsibility, and a clear and complete understanding of the uniqueness of their own majors to students' knowledge structure and career orientation. Huang (2017) conducted a research on the implementation of comprehensive reform of college entrance examination in Zhejiang and Shanghai and suggested that the more top students are, the more

they should be reminded to attach importance to the relationship between the selected subjects and subsequent professional learning, and not to pay too much attention to the combination of selected exams. Students at different levels should be guided in different categories. It is necessary to respect students' choices and guide them to take the initiative to correct deviations. Zhou (2017) highlighted the demand for establishment of high school education to put importance on individual growth of students. Zhou discussed about high school education that is shifting towards the individual improvement of students and reflected it is necessary for high schools to fully understand the new policy for the college entrance examination, while at the same time systematically reconstructing the school's education model, and transforming high school management from the pursuit of "uniqueness in selection" change to "diversity in choice", and finally realize the reform goal of school running with characteristics and the growth of students' personality. Combining with the specific changes that have occurred at the school level in the process of implementing the new policies for the college entrance examination in Shanghai and Zhejiang, it was considered as an important topic to explore the transformation of high school education towards the growth of students' personality. The author contemplated that the new policy for the college entrance examination takes a different approach and that in addition to the selection function of the college entrance examination, it also provides students with sufficient choice opportunities through a new system design, while at the same time strengthening the guidance of students' development direction, training and testing students' ability to choose. In contrast, with students' independent choice of college entrance examination subjects and the diversified combination of college entrance examination subjects, the school's curriculum arrangement and teaching order have become extremely chaotic. Hu (2017) viewed that pilot program of college entrance examination system in Zhejiang province helps students' individual growth by focusing on 'selective' educational feature which respected students' choice. However, this speculation is necessary to have more grounded fact. Seems like numbers of researchers voiced their

opinion regarding the need for reform and importance of taking care of each students' different interests.

X. Liu (2018) expressed that "3+3" model will inevitably increase the total amount of schoolwork burden and will also increase the pressure of examinations. And this kind of schoolwork burden and test pressure will also diffuse and spread to the second year or even the first year of high school. X. Liu also believed that the ratio of exams, high school performance and college self-tests allows colleges and universities to see both scores and students, gradually changing the linear evaluation model of "score-only". One of the features they pointed out from this reform is that it promotes general education in high school, especially the expansion of classic theories of major subjects and personal interest subjects and accumulates a broader foundation for the relatively complete knowledge structure the cultivation of innovative thinking, and long-term development. They also considered that judging from the 26 provinces' college entrance examination reform plans that have been announced so far, although Zhejiang's college entrance examination reform pilot program is limited in scope and encountered some difficulties, it still ranks among the forefront of the college entrance examination reform in all provinces and cities. Liu, H & Liu. L (2017) defined the issue of previous 3+1 system as due to the different difficulty of different subjects, students will be biased when choosing exams. Many students abandon physics and choose biology instead of physics due to the difficulty of physics, which leads to too many students majoring in biology, which leads to the phenomenon of "pressure points" in marking papers. At the same time, because the subject bias is too serious, it also brings problems such as inability to correspond to university majors, inconvenience in reasonable arrangements for adjustment, and poor comparison of subject scores. The expansion of college enrollment for many years has brought more young students the opportunity to receive higher education and increased the gross enrollment rate of higher education in China. It is of far-reaching significance, but it has also caused problems such as the decline in the quality of higher education and the difficulty of obtaining employment for college students. On

the contrary, they complimented as the new college entrance examination plan considers both the promotion of fairness and the scientific selection of talents. It is the most comprehensive and systematic reform of the college entrance examination reform since the resumption of the college entrance examination. It is a systematic reform with top-level design and comprehensive planning, which is of great significance. The new college entrance examination not only inherited and improved part of the college entrance examination measures in the previous stage, but also carried out a comprehensive reform in terms of examination subjects, examination content and form, and enrollment mechanism.

The new college entrance examination subject selection forces high schools to step out of their comfort zone to make changes, which is both an opportunity and a challenge for high schools (Zhang et al., 2018). They advised it is necessary to clarify the enrollment requirements of colleges and universities to provide a basis for students to choose courses in order to carry out career education in a timely manner to grasp the dynamics of students' selection of courses and to strengthen the guidance of selection of courses to meet the needs of students at different levels and further to seize opportunities to complete the transformation of high schools. The new college entrance examination subject selection allows students to have 20 or 35 combinations of subjects in the college entrance examination, which means that high schools can also find their own development advantages from these combinations. And then form the characteristics of running a school. In this sense, the new college entrance examination grants students the right to choose exams, which is also conducive to promoting the unique development of the school. G. Sun (2018) made study on in-depth implementation of student-oriented education and issued some difficulties and problems that encountered as well as pointed out useful attempts to solve problems of putting too much importance on score only. Sun defined that the "3+3" system is implemented to enhance the correlation between college entrance examination and high school learning and also stated that the Zhejiang program provides candidates with more choices in terms of entry pathways, examination

subjects, examination opportunities, and majors to be applied for, helping students to achieve a comprehensive understanding of what they have learned, test their strengths, and record their wishes. G. Sun thinks that while expanding choices and giving students full autonomy, it also cultivates students' career planning skills. On the contrary, Xiong (2018) argued that exam arrangements and the number of subjects opened exceeds the requirements. The high school first grade offers more than 8 subjects per semester, which rushes to the teaching progress, seriously increases the burden of students' academic work and also impacts the order of high school teaching. Another drawback is brought up by Feng (2018) indicating that due to several factors such as the no longer division of arts and sciences, the utilitarian choice of candidates, the unreasonable requirements of college elective subjects, and the incomplete scoring method, there has been a continuous decline in the number of candidates for physics which might eventually harm the training of national scientific talents. The author recommended in order to guide students in rational selection, optimizing scoring methods and introducing scoring weights must be researched in the future. Pires (2019) addressed the influence of college entrance examination on the profile of Chinese students and intended to highlight crucial elements of the Chinese education. To understand the distinctiveness of Chinese students' learning pattern compared with those from western countries, we should pay attention to the critical role of college entrance examination which the most influential part in education system of Chinese. He encouraged that before making comparisons it is necessary to know and understand the intrinsic issues of each culture. X. Liu (2019) made review on the pilot reform of new college entrance examination and studied that under the grading system of free selection of subjects, abandoning physics has become a difficult problem common to Zhejiang and Shanghai and that elective subject test system will inevitably cause physical examination difficulties.

V. CONCLUSION

The need of changing college entrance examination has been mentioned numerous times

through the years. Pilot reform in Zhejiang and Shanghai is the first step taken to promote the diversity of choices for those who plan to attend the colleges and universities they consider suitable for them. Elective subject test system was praised by many on its attempt for improvement of students' individuality. Students realizing their own strength and choosing tests for their preferred major can raise the possibilities of producing more skilled personnel in the future. Successful reform will play important role for the whole country and its education quality. However, the issue regarding the challenges that high school management facing due to the many combination of subject choices were concerned mostly. The issue regarding imbalance of subject choices were also raised. There seems to be not much significant study made on impacts of elective subject test system on students' individual growth or improvement or even development in schools of pilot provinces. Since the college entrance examination pilot reform is comparably new, there need to be more study on whether the elective subject system has helped the students' improvement and whether it has showed positive impacts as a new system.

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