Proceedings of the 3rd International Conference on Global Politics and Socio-Humanities
DOI: 10.54254/2753-7048/2025.HT23204

The Impact of Exam-Oriented Education on China's Students Development and Economic Development

Yijian Huang

Xiamen No.1 High School of Fujian, Xiamen, China
jasonjian08119@gmail.com

Abstract: The unique education system in China – the Exam-Oriented Education – is an examination system handed down from the past. As the main means of cultivating talents, education plays a crucial role in a nation's development. The paper aims to analyze the positive and negative impacts of exam-oriented education to both students' and economic development in China. In the article, qualitive analysis is mainly adopted to study the impacts of the system. Based on the analysis, the paper draws conclusion from different perspectives. Positively, students are benefited from the system by building solid academic foundation and cultivating persistence, meticulousness and information processing ability. People's strong ability in Science, Technology, Engineering and Mathematics (STEM) result in a rapid development in nation's science and technology, which contributes to economic growth. On the contrary, the strict system somehow restrains student's diversity, creativity, and critical thinking ability, which further influence the nation's innovative ability. To solve the problem, potential policies such as changing evaluation system or improving vocational education are proposed as recommendations.

Keywords: exam-oriented education, student development, economic development

1. Introduction

Education plays a fundamental role in shaping a nation's economic and social development. As the primary means of cultivating talents and human capital, education directly influences workforce quality, innovation capacity, and economic competitiveness.

In the United States, the education system is Quality-Oriented Education, which weighs more on students' comprehensive ability, including qualities such as academic, sports, and social responsibility. Such an education system, first of all, can effectively develop students' critical thinking skills, aiming at making sensible decisions about what to believe or what to do [1]. The critical thinker is inquisitive, flexible and open minded, making it more possible to create and innovate. According to the data, from 1972 to 2017, the overall count of frictional science Nobel Prize winners in the US increased from 52 to 126 [2]. Additionally, the United States has the highest Nobel Prize winning rate throughout the history, accounting for a proportion of 42.5%, which indicates the importance of education in the United States [2].

In Japan, education is also highly regarded. During the Meiji Restoration period, the Meiji government introduced a compulsory education system, which aims at cultivating talents for industrial development [3]. After World War II, the Japanese government introduced an American-type system that developed more on personality, and focused on Science, Technology, Engineering,

DOI: 10.54254/2753-7048/2025.HT23204

and Mathematics (STEM) skills. Decades after, the cultivation of STEM talents laid the foundation of modernization and the rise of manufacturing. Contemporary, resulting from its education, Japan's manufacturing industry has long been at world's leading level, which focuses on high-tech industries and precise manufacturing. Camera brands, for instance, such as Sony, Canon and Nikon, have always been the most popular among photographers. Without doubt, the creation of cameras is inseparable from Japan's education system, and the camera industry has further contributed to Japan's economy.

In Finland, the education system largely fosters the economy. In the 1970s, the Finnish education system changed from a dual selective system into a comprehensive system, which is mostly free and creativity-based [4]. Students in Finnish schools are able to integrate the skills they learn in school, such as science, art and computer programming, into real-world problems. Unlike some other countries, students entering upper secondary education experience less education related to tests and exams [4]. Indeed, teachers in Finland teach in order to help their students to learn, instead of passing the exam [4]. The comprehensive education system cultivated a large amount of skillful people, creating large corporations such as Nokia, which contributes to a significant economic growth in Finland.

There is no doubt that education plays a vital role in promoting a nation's economic growth. In China, the education system has experienced several reforms. During 1977 to 1991, Deng Xiaoping, engaged China to learn from the West, focusing on scientific and technical development [5]. Chinese education has since then experienced recovery and reconstruction, new start, and adjustment and new development in education policy under the guidance of Scientific Outlook on Development [5]. However, due to the country's massive population, competition for education resources has become increasingly intense. In such circumstances, a unique education system – Exam-Oriented Education – has emerged in modern China.

This paper aims to study the impact of Exam-Oriented education on China's economic development. The paper mainly analyzes its positive and negative effect on both students and economic development, and provides potential solution.

2. Overview of education system of China

In contemporary China, education is highly valued. There is a nine-year compulsory education policy, which enables most of the students to complete their education before senior high school. However, a lot of students are worried about their future development, and some parents are also anxious about their kids. Thus, more competition is emerged.

Due to the staggering population size, intense competition has caused several problems in different aspects. Typically, there are two exams that are most important to students in China, which are the High School Entrance Examination (Zhongkao), and National College Entrance Examination (Gaokao). As the names suggest, one is the exam that determines students' high school direction, and the other determines college entrance. The importance of these two exams is irrefutable, especially Zhongkao – almost 50% of students are not able to enter a high school. Thus, the aim of learning focuses solely on passing the examinations for most Chinese students [6]. In schools, teachers also spend more, or most, of the time on teaching exam-related contents [6].

From a positive perspective, students in China receive solid fundamental education, especially in STEM fields, which prepares them for future careers. The strong academic foundation enables China's economy to work steadily. However, the negative impacts are also obvious. The students who enter the high school will face more advanced learning materials and intense competition, while the students who are not able to enter may lose their chance to receive higher education. A number of students may decide to study during every second, to give up their hobbies and interests, and to consider every single point they have had lost in tests and exams. Under such high pressure, mental issues are common among students. In addition to student's psychological problems, such educational

DOI: 10.54254/2753-7048/2025.HT23204

systems somehow restrain the development of creativity and critical thinking, leading to a potential stagnation in innovation. Students are taught to answer questions correctly, but not being taught to answer a question without a definite answer.

3. Economic impact of exam-oriented education

3.1. Positive impact

Since ancient time, China has attached great importance to education. About 1000 years ago, in Sui Dynasty, the Imperial examination system was first developed. The development of the system continuously supplied talents for successive dynasties. In modern China, the education system has experienced several reformations, which focus more on science and technology developments [5]. The long-standing tradition of selecting talents through examination has played a vital role in talent cultivation today, constantly contributing to society and economy.

Exam-oriented education, in some respects, benefits the students a lot. Since students in China, during their test, need to get a score as high as possible, exam-oriented education pays high attention to fundamental knowledges. In subjects such as Mathematics, Physics and Chemistry, students form a solid academic foundation through repeated training every day. Thus, it is common to hear about Chinese students winning awards in international academic competitions. In addition, through the long-term exam preparation, students develop high level of self-discipline, stress resilience, and perseverance, which are very important in their future studies, research, and career. In the process preparing for examinations, student's information processing and memorizing ability are well developed, enabling them to deal with more complicated problems in reality. For Gaokao, although with some drawbacks, the standardization of the examination results somehow allowed millions of people from disadvantaged groups to achieve educational success [7]. People from low income group may have a relative fair opportunity, devoting themselves to achieve a brighter future [7].

From the economic perspective, it is undisputable that human plays a crucial role as a determinant in national growth [8]. Countries with larger human capital supply tend to grow faster, while too little human capital may negatively affect a country's growth [8]. Without sufficient supply of well-trained managers, scientist and engineers, new profit opportunities will be easily lost [8]. In China, however, the exam-oriented education can rapidly improve people's overall quality, providing market with sufficient high-level labor force, especially in science and technology field. In China, the world's largest amount of science and engineering graduates provide the society with a number of talents in engineering, manufacturing, information technology, research and other fields. In recent years, China has made significant breakthroughs in artificial intelligence, quantum communication, space technology, high-speed rails and other fields, which is inextricable with the education system. With the continuous supply of talents, China is able to maintain a steady economic growth in the future.

3.2. Negative impact

Although education is highly regarded in Chinese culture and society, there are still some drawbacks of exam-oriented system that are not ignorable. The system may have some effects on students' daily stress, critical thinking skills, personal development, mental issues and other aspects. In addition, the general problem of labor force will further influence the whole economy.

In China, the importance of Gaokao is self-evident, that schools, especially high schools, pay most attention on exam-related knowledges. Exam questions in Gaokao are complicated, that students have to repeatedly reviewing contents of main subjects and spends most of their time doing practice questions. The system does provide them solid academic foundation. However, focusing solely on examinations often costs students' imagination and creativity [6]. There is always a standardized answer for every question, even for subjective understandings such as reading comprehension. The

DOI: 10.54254/2753-7048/2025.HT23204

students, consequently, may lose their ability to think critically, to answer a question without exact answers, and to question the so-called truth. From a broader perspective, China urgently requires for talents with original thinking and creativity. Nevertheless, students trained from the exam-oriented education system are usually not good at creating, but at solving problem. This situation also indicates why China can have a steady economic growth, but with relative less innovation.

In addition to creativity, mental health issues among Chinese students also attract attentions. Research shows that there is a higher probability for students in Asia with depression-related symptoms than that in America [9]. This is perhaps due to higher school pressure and less free time [9]. In China, students spend most of their time in school every day, especially during high school – they stay at school from early morning to late night. Thus, before college, students do not have sufficient amount of time interacting with the society, developing their interests, and pursuing for their own goals. Such lifestyle causes some students to experience serious depression, feeling stressed and dropping out. However, the education system is not possible to be changed in short run, and students' mental health issues have long become a serious concern in Chinese society.

The diversity of jobs is important in a nation's development, since different areas of society need different talents to develop. For instance, development in technology requires for scientists, while development in tennis needs tennis coaches. In China, people who are talented in STEM fields are numberless [7]. However, the uniformity of education content and the scarcity of free time largely restrain the development of diverse professionals [10]. Additionally, instead of focusing on academic achievement, choosing, or being forced, to be a skilled worker in China can easily be regarded as "not successful." The society somehow holds some bias on vocational education, because the whole vocational schooling system is yet far from meeting the rising demands for education [10]. For this reason, the cultivation of talents in fields other than academia, such as athletics or musicians, may be constrained by the education system.

3.3. Policy recommendation

It is apparently not realistic to make rapid changes of contemporary Chinese education system. However, there are still some improvements could be taken into account.

For instance, in order to reduce students' study pressure, the Ministry of Education could change the evaluation system from score-only to comprehensive quality evaluation. Students' overall ability, such as interests, innovative activities, cooperation and leaderships, should be tested. The main sources of students' depression are heavy homework pressure and lacking free time. If the evaluation system is reformed, they will not pay all their attention on academic works; instead, more free time can be put on their interests. Thus, it will be less likely for students to feel stressful, while still struggling with massive work every day.

In addition to reducing schooling pressure, it is also important to break the "hierarchy" between vocational education and general education. Since long time ago, vocational education was regarded as the system for students who "lost in examination." However, skilled people also play a vital role. Government could increase the investment in vocational schools and enhance the teaching quality. The stereotype of "score is everything" should be abolished, and the importance of other skills should also be valued. Recently, the government is planning to implement policies relating to the issue, such as solving the division problem of Zhongkao and raising regards for vocational education.

4. Conclusion

The paper briefly mentions the introduction of Exam-Oriented Education system in China. The unique education system has affected both students' development and the nation's economy. The purpose of article is to analyze the exam-oriented education's impact on students and the economy

DOI: 10.54254/2753-7048/2025.HT23204

from both positive and negative perspectives. In addition, some potential policy recommendations are also given in the paper.

According to the analysis, China's education system has several advantageous impacts on the students and the economy. Students can build up solid foundation on STEM subjects, which not only benefits themselves, but also prepares them for the nation's scientific development. During frequent tests, they cultivate their resistance, meticulousness, and information processing ability. From a broader perspective, contributed by people with rigid foundation in STEM field and virtues of persistence, technological fields such artificial intelligence and information technology experience a rapid development, which further contribute to the whole economy.

However, the drawbacks of exam-oriented education are not negligible. Since young, students in China experiences heavy schoolwork and pressure from examination. They spend most of their time studying at school, doing repeated exam practices, and have little free time being themselves. In this case, most of the students have neither interests nor skills, such as sports or music. The low diversity of professions in the society may be related to this situation. Additionally, students are taught to solve problems with exact answer, but lack development of creativity and critical thinking ability. Thus, innovative ability has become a concerning issue for the future of China, since people cultivated from exam-oriented education may be weak on being creative. Aiming at solving these problems, some potential policies are mentioned in the paper. For instance, the Ministry of Education can change the overall evaluation system, reducing weights on test scores and focus more on personal quality. Encouraging vocational education is also a possible solution to the intense competition and heavy pressure.

The paper has some limitations. The main content of the article is qualitative analysis on the exam-oriented education. It can be improved, however, by collecting data and information from different generations. Such quantitative analysis on the system's long-term impacts on both personal and economic development can be a future research direction. In addition, the study can also combine policies from other nations to make comprehensive prediction about the impact of education system.

References

[1] *Enciso, O. L. U., Enciso, D. S. U. and Daza, M. D. P. V. (2017) Critical thinking and its importance in education: Some reflections. Rastros Rostros, 19(34), 78-88.*

[2] *Gros, C. (2018) An empirical study of the per capita yield of science Nobel prizes: is the US era coming to an end?. Royal Society open science, 5(5), 180167.*

[3] *Sumikawa, S. (1999) The Meiji Restoration: Roots of Modern Japan. Asia 163, Work Paper, 1-18.*

[4] *Moore, T. (2008) Finnish education system. Northern Ireland Assembly, Research Paper, 46/08.*

[5] *Oyeniran, R. and Uwamahoro, E. (2017) Impacts of reforms in Chinese educational system. International Journal of Education, 9(1), 30-48.*

[6] *Kirkpatrick, R. and Zang, Y. (2011) The negative influences of exam-oriented education on Chinese high school students: Backwash from classroom to child. Language testing in Asia, 1(3), 36.*

[7] *Gierczyk, M. and Diao, R. (2021) Socio-educational contexts of Gaokao exam: A qualitative retrospective study of how gaokao is perceived by successful exam-takers. International Journal of Chinese Education, 10(2), 22125868211035802.*

[8] *Opper, S. (2005) The giant graduates: China's strive for high-technology. In CESifo Forum, 6(3), 43-48.*

[9] *Lei, X. Y., Xiao, L. M., Liu, Y. N. and Li, Y. M. (2016) Prevalence of depression among Chinese University students: a meta-analysis. PloS one, 11(4), e0153454.*

[10] *Lin, J. and Ross, H. (1998) The potentials and problems of diversity in Chinese education. McGill Journal of Education, 33(001), 31-49.*