

Analysis of the Causes of the Chinese High School Education Burden

Yuxuan Mao^{1,a,*}

¹Zhengzhou Foreign Language School, Zhengzhou, 450000, China

a. 2790135114@qq.com

**corresponding author*

Abstract: In recent years, the education sector has grappled with a pressing issue – the phenomenon of "involution". This trend has gained momentum due to the relentless rise in academic pressures faced by students. Scholars and researchers have increasingly turned their attention to unraveling the root causes of educational stress and the intensification of competition within the system. Notably, there has been a remarkable surge in publications addressing educational alleviation, paralleled by a growing body of empirical research in this area. This article delves into the multifaceted challenges associated with educational alleviation, adopting a perspective rooted in basic economic principles, such as the signaling theory and the prisoner's dilemma. It contends that the Chinese education sector confronts a complex array of obstacles. One primary challenge is the scarcity of educational resources, which strains the system's capacity to cater to the diverse needs of its student population. Additionally, a societal bias in evaluating the worth of individuals based solely on academic achievements exacerbates the problem. In conclusion, this article highlights the intricate dynamics at play within the Chinese education industry, shedding light on the intricate interplay of factors that contribute to the persistent issue of involution. It underscores the need for a holistic approach and systemic reforms to mitigate these challenges and promote a more balanced and equitable educational landscape.

Keywords: Educational Alleviation, Student Burden, Signaling Theory, Prisoner's Dilemma

1. Introduction

In July 2010, the Ministry of Education of China issued the "National Medium and Long-term Education Reform and Development Plan Outline (2010-2020)," which highlighted the importance of "reducing the academic burden on primary and secondary school students" as a significant aspect of compulsory education reform and development planning. Subsequently, the country introduced a series of policies related to burden reduction. Especially in 2021, the General Office of the Communist Party of China Central Committee and the General Office of the State Council issued the "Opinions on Further Reducing the Homework Burden and Off-campus Training Burden of Students in the Compulsory Education Stage" (referred to as the "dual reduction opinions"). For China, burden reduction is not a new topic. As early as July 1955, the Ministry of Education issued the first burden reduction order in the People's Republic of China, titled "Directive on Easing the Heavy Burden on Primary and Secondary School Students." According to incomplete statistics, since 1985, over a span of 35 years, the Ministry of Education has issued more than 50 "burden reduction orders," averaging

about 1.5 policies per year concerning educational alleviation. This demonstrates the nation's emphasis on burden reduction. Unfortunately, despite decades of effort, the goal of "educational alleviation" has not been truly achieved, and student burdens have increased rather than decreased since the first policy on burden reduction was introduced in 1955.

In order to effectively solve the problem of educational burden, it is necessary to explore the causes of the formation of educational burden. In this paper, the author introduces three basic economic concepts to explain the formation process of educational burden, which are the signal theory, the prisoner's dilemma, and the trade-off between fairness and efficiency. This paper can provide an effective reference for all educational policymakers and offer a novel angle by analyzing the causes of the educational burden from the perspective of economics and psychology.

2. Challenges of Alleviating the Burden of Education

Numerous scholars have provided different explanations for the causes of students' academic burdens, but they mainly fall into three schools of thought: Firstly, the "policy school," which asserts that institutional policies bring pressure. Scholars of this school believe that the formation of educational burdens is due to the college entrance examination system and the unequal distribution and insufficient overall supply of educational resources. Secondly, the "market-oriented school" suggests that pressure arises from the diploma-oriented selection mechanism of employers and the job market. Thirdly, scholars of the third school believe that traditional cultural concepts in Chinese culture impose pressure on students unconsciously. Current academic literature [1] and professional scholars have generated numerous conclusions about the causes of pressure. This article contends that, much like the causes behind other social phenomena, the reasons for educational pressure are undoubtedly influenced by multiple factors. All three schools of thought illustrate the real state of society. Therefore, systems, markets, and cultural environments have all, to some extent, contributed to the formation of educational pressure.

2.1. An Obsession with a Higher Diploma: The Signaling Theory

The signaling theory, proposed by the Nobel laureate economist Spence, encompasses two major aspects: signal transmission and signal differentiation. Signal transmission involves conveying precise information about the value or quality of a commodity through observable behaviors, while signal differentiation refers to discerning genuine information through different contracts. In the job market, due to information asymmetry, when the costs of observation and differentiation are high, employers tend to select a signal as a screening criterion, and job seekers also amplify the advantage of signals to secure success in the job market. This theory similarly applies to the field of education, where diplomas serve as the most convenient and expedient signals for identification and differentiation.

Specifically, employers use diplomas as signals to convey selection criteria for employment, which are then transmitted through job seekers to stakeholders in the education field such as universities, primary and secondary schools, parents, and teachers. These individuals and groups make rational decisions in response to signals from the job market. Consequently, in the realm of education, the signaling theory has evolved into what is known as the "diploma theory" [2].

In this context, a diploma is no longer merely a graduation certificate; it becomes a vessel for value, reflecting the competence of the job seeker. This approach is equally rational for enterprises – minimizing cost control is a precondition for maintaining operations. Given the backdrop of information asymmetry, employers find it highly efficient to use easily distinguishable levels of education as a screening criterion for job seekers. Moreover, individuals with higher education levels have generally undergone the more challenging selection process of college entrance examinations,

entered prestigious universities, and incurred higher time and financial costs. Theoretically, they are expected to have higher success rates and lower error rates. Consequently, this practice is widely adopted in the labor market, gradually forming a consensus that "higher education leads to higher competence" and a distinct preference for individuals with higher education credentials.

Real-life experiences of students similarly support the notion of the "diploma theory" within the education field. During their secondary school years, students dedicate relatively little time to acquiring new knowledge. Instead, they spend more time on revision, practice exams, and continuous testing. These efforts are not primarily aimed at gaining the intrinsic value of knowledge, but rather at acquiring a more advantageous "signal" – a higher diploma. This higher diploma can then be used to transmit a signal of elevated educational achievement in the job market, facilitating the acquisition of better employment opportunities. Educational competition has subtly transformed the original purpose of school education. Parents and students have reached a consensus that a school's primary responsibility is to help students excel in various levels of competitive exams, enabling them to gain the best possible signaling capital for their next steps. This aspiration has shifted education from nurturing to selection. To cater to parental demands and expectations, schools concentrate educational resources through strategies such as establishing specialized classes, intensifying subject-specific homework training, and reducing non-core subject study time. These efforts aim to increase students' exam scores and the chances of admission to prestigious schools so that they can obtain parental and societal recognition and attention, thus securing increased financial investment. Under the strain of high-intensity teaching management and the burden of extensive coursework, the physiological and psychological load caused by academic tasks exceeds the limits students can bear, resulting in physical and mental damage.

2.2. A Struggle for Rational Decision-Making: Prisoner's Dilemma

In addition to the signaling theory, another obstacle to educational alleviation is the phenomenon of the prisoner's dilemma present among students. The prisoner's dilemma asserts that within a collective group, individual optimal choices lead to collective irrationality. In the context of students [3], this can be understood as follows: all students form a collective, education resources are limited, and the college entrance examination serves as a means of selecting talent and allocating these resources. The optimal solution for the collective should involve all individuals adopting a low-intensity approach to examinations, which would lead to a rational distribution of existing resources without expending excessive effort and costs. However, at an individual level, a high-intensity exam approach is often the optimal choice or the "dominant strategy" since regardless of how other individuals approach exams, one's own high-intensity approach often allows them to outperform more individuals and gain access to better educational resources. The lack of cooperation between individuals makes it difficult to achieve cooperation, further compelling everyone to prepare for high-intensity exams. The final result is a rational distribution of educational resources, as if the collective had adopted a low-intensity approach.

While a proactive exam approach has certain benefits for society, such as raising the overall competence of all students, the real situation is more complex than the prisoner's dilemma. The prisoner's dilemma assumes that each individual makes decisions based on rationality and the marginal theory. When the marginal benefit of high-intensity exam preparation becomes smaller than the marginal cost, rational individuals should cease increasing their exam efforts, as continuing to do so becomes unprofitable and may diminish the overall benefits of education. However, in reality, students struggle to make rational decisions due to various factors.

The first factor stems from a society's singular value assessment system. People evaluate students based on their academic performance, and universities admit students based on whether their scores meet admission criteria. Even parents' and teachers' attitudes towards students are influenced by their

scores. In this context, if a student does not agree with this value assessment system, they may gain fewer benefits than others and might even be labeled as lacking ambition. Consequently, students continually intensify their exam efforts not solely for marginal benefits, but also to appease society, parents, and teachers. Among students, even peer relationships can be influenced by scores. The competition today is no longer solely for educational resources; when individuals are no longer motivated by direct benefits, the competition becomes about achieving psychological gratification, surpassing others, and gaining the respect of others through improved performance. This form of competition driven by personal satisfaction has no end.

The second factor involves individuals' aversion to loss, known as loss aversion [4]. When facing the same amount of gain and loss, people find losses more distressing. Due to loss aversion, individuals consider sunk costs – costs that have already been paid and cannot be recovered – in decision-making. Rational decision-makers only consider expected costs. This behavior applies to students as well. Students fear that years of study might become futile, and this fear of wasting effort due to loss aversion constantly pressures them to increase their exam intensity in exchange for more educational resources.

The third factor arises from inflammatory slogans and catchphrases. High school students are likely to have heard phrases like "improve by one point, surpass thousands," or "the college entrance exam is a turning point in life." These slogans reflect the fact that schools primarily evaluate students based on their scores. The promotion of slogans advocating a "solely scores-based" and "solely college entrance exam-based" mindset is not conducive to students making rational choices. Instead, it pushes them further away from rational consideration.

3. Trade-Offs Between Equity and Efficiency

Economics posits that due to limited resources, individuals must often make trade-offs between equity and efficiency. In China, with relatively limited per capita educational resources, educational policies have differentiated combinations of equity and efficiency across various educational stages, including preschool, primary and secondary education, and higher education. Through different allocation models, the aim is to achieve maximal benefits.

As early as 2010, the "Opinions of the State Council on the Current Development of Preschool Education" [5] emphasized the need to "develop preschool education with public welfare and universality." This indicates that the national positioning of preschool education is as a public service for livelihood security. However, this policy did not categorize preschool education as part of compulsory education; instead, it adopted a policy of social schools and hierarchical management by local governments. This approach has led to differentiation in educational starting points and resources. The "5080" campaign aimed at preschool education is an important measure to promote inclusive preschool education and standardize it. It has, to some extent, alleviated disparities in preschool education. Nonetheless, China still permits the existence of 20% of for-profit private kindergartens, and the elimination of disparities in educational starting points remains incomplete.

According to the "Global Education Monitoring Report Summary," [6] the return on investment in basic education is second only to higher education on a global scale. Therefore, both from the perspective of educational equity and economic benefits, universalizing compulsory education and basic education are rational decisions. Public education serves as the main driving force for advancing basic education in China. However, due to the promotion of graded management by local governments and social schools, private schools have seen substantial development, encroaching on the educational resources of public schools. Overall, there is a trend of "public withdrawal, private advancement." Moreover, since high-quality educational resources are significantly siphoned off from public schools to some private institutions, the basic education sector has experienced the "Matthew Effect" (where the strong become stronger and the weak become weaker). In addition to

the threat posed by private schools to the public education system, the system of key schools also plays a crucial role in resource allocation: teaching staff, education funds, and facilities tend to favor key schools, leaving non-key schools with insufficient resources. As a result, the fairness of basic education has been further weakened, replaced by an emphasis on efficiency. Lastly, the "branch-type" education system is one of China's basic education systems: students receive unified schooling until the middle school entrance exam, after which they are assigned to either the regular education system or the vocational education system. The limited educational resources allocated to vocational education and the constraints on students' future employment prospects further magnify the role of the middle school entrance exam as a "turning point," turning it into a selection-based exam similar to the college entrance examination. These various factors have led to a growing distance between basic education and educational equity.

The college entrance examination, or "gaokao," is a crucial mechanism for nationwide talent selection in China, with its main purpose being the selection of talent. As the primary means of distributing higher education resources, the gaokao is a significant avenue for maintaining and extending the social status of privileged classes, and the only way for lower classes to achieve upward mobility. However, the gaokao cannot achieve absolute fairness. As previously mentioned, due to the key school system and social school policies, high school educational resources are increasingly concentrated, which to some extent weakens fairness. Human capital theorist Schultz argues that higher education is essential for developing countries. Relevant studies [7] also demonstrate that the return on investment in higher education is far higher than that of other stages of education. Hence, significant investment in higher education is a rational decision for the state to maximize its educational investment returns. In recent years, China's vigorous promotion of the "Double First-Class" construction project has manifested the key school system in the realm of higher education, with evident policy bias and a concentration on educational finances.

In 2014, data on education funding for 75 universities directly under the Ministry of Education [8] showed that top-tier universities possess substantial financial resources, with the annual budgets of the top ten universities accounting for 36.6% of the total budget for all universities. In contrast, the annual budget sum for the bottom ten universities accounted for less than 3% of the total budget. Despite selection and efficiency being keywords for high school and higher education, national policies continue to demand a balance between fairness. For example, the "High School Education Universalization Campaign (2017-2020)" [9] explicitly states that the gross enrollment rate for high school should exceed 90% by 2020, making the universalization of high school education one of the main educational goals. The "Notice on Improving the 2015 Enrollment of Ordinary Colleges and Universities" [10] also states a need to favor provinces with relatively low admission rates to key universities to compensate for the educational resource disparities in less-developed areas. Additionally, based on market logic, the state encourages the socialization of higher education. The rise of private higher education institutions has made a significant contribution to the popularization of higher education. In 2020, China had a total of 711 private general universities, with 7.913 million undergraduate and vocational college students, accounting for 24.1% of the total number of undergraduate and vocational college students nationwide.

4. Conclusion

The difficulty in alleviating the burden of education has been a critical challenge hindering the development of China's education system for many years. This paper has utilized fundamental principles of economics to explain the challenges and causes of educational burdens. It has summarized the "diploma theory" formed under the framework of signaling theory, discussed the "prisoner's dilemma" existing among students, and examined the differentiated combination of efficiency and equity factors across different educational stages. From an economic perspective, the

paper has analyzed the current status of efforts to reduce educational burdens, highlighting that the road to reducing educational burdens in China is both arduous and long.

By delving into the intricate factors that contribute to educational pressures, this analysis sheds light on the complex interplay between policy, societal values, market dynamics, and individual choices. The tensions between equity and efficiency, the role of signaling in education, and the prisoner's dilemma provide insights into the deep-rooted challenges that need to be addressed to create a more balanced and equitable educational environment. While the journey to alleviate educational burdens might be demanding, it is essential for policymakers, educators, parents, and students to collectively work toward a more sustainable and fair educational system. By acknowledging the multifaceted nature of the issue and drawing on insights from economics and beyond, stakeholders can make informed decisions and develop strategies that lead to positive changes in China's education landscape.

References

- [1] Ni, X., Zhang, Y. Y. *How is educational load reduction possible: An analysis based on signaling theory*. South China Normal University, 2022(9).
- [2] Perri, T. *Online education, signaling, and human capital*. *Information Economics and Policy*, 2016(36), 69-74.
- [3] Zhu, J. D. and Zhu, X. Q. *Reducing the burden of primary and secondary school students and the "Prisoner's Dilemma Game" theory*. *Education Science*, 2002(4), 11-13.
- [4] Gächter, S., Johnson, E. J. and Herrmann, A. *Individual-level loss aversion in riskless and risky choices*. *Theory Decis*, 2022(92), 599–624.
- [5] *Opinions of the State Council on the Current Development of Preschool Education*. *Chuxiong Political Daily*, 2011(01), 5-7.
- [6] United Nations Educational, Scientific and Cultural Organization (UNESCO). *Global education monitoring report summary 2016: education for people and planet: creating sustainable futures for all.* 2016.
- [7] Kristin, B. and Blom, E. *Evaluating the Return on Investment in Higher Education: An Assessment of Individual- and State-Level Returns*. Urban Institute. 2018.
- [8] Ministry of Education, National Bureau of Statistics, Ministry of Finance *Announcement on the Implementation of National Education Funds in 2014*. [2015] No. 9. *Bulletin of Ministry of Education of the People's Republic of China*, 2015(12):14-20.
- [9] *High School Education Popularization Plan (2017-2020)*. *New Education*, 2017(13):12-13.
- [10] *Notice on Improving the 2015 Enrollment of Ordinary Colleges and Universities*. *Bulletin of Ministry of Education of the People's Republic of China*, 2015(05):37-39.