

A Review of Shadow Education

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Abstract: *At the moment, shadow education is undergoing a rapid global expansion and has garnered widespread attention from a variety of sectors of society. After reviewing a substantial body of literature on after-school tutoring, this paper will attempt to summarize the findings of existing research on the evolution, current landscape, operating patterns, causes, impacts, and regulation of shadow education, with the goal of providing an overview of the subject for academia and sparking future research.*

Science Insights Education Frontiers 2022; 11(2):1579-1593.

Doi: 10.15354/sief.22.re058

How to Cite: Yu, J., & Zhang, R. (2022). A review of shadow education. Science Insights Education Frontiers, 11(2):1579-1593.

Keywords: *Shadow Education, Educational Equality, Private Supplementary Tutoring, After-School Tutoring Institutions, Regulation*

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Conflict of Interests: None

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SHADOW education, also known as private tutoring or supplemental education, is a collection of after-school educational activities designed to help students improve their academic performance (Bray, 2002). Stevenson and Becker (1992) coined the term “shadow education” in 1992. Later, Bray (2012) elaborated on shadow education in a relatively systematic manner, arguing that the metaphor of “shadow” stems from the fact that shadow education exists only because mainstream education exists and changes in response to the latter’s changes, and that its overall picture is not as distinct as the latter’s. Despite the global debate over how to conceptualize and characterize shadow education, scholars agree on the following: (i) Shadow education is a supplement to mainstream education; (ii) It requires tuition, which is determined by the profit-making nature of the service providers, whether institutional or individual; and (iii) The teaching content of shadow education is highly consistent with that of formal schooling, and its primary objective is the same.

We searched the Chinese academic database CNKI (China National Knowledge Infrastructure) for the terms “shadow education” and “after-school tutoring” and found 1,204 articles published between January 2000 and February 2022. The top 20 most frequently cited documents indicate that existing research on shadow education focuses primarily on its causes, development trends, effects, existing problems, and governance measures; educational inequality in relation to shadow education is another hot topic of discussion in this field. The results of a Google Scholar search for “shadow education” indicate that, from a global perspective, the discussion of shadow education is also focused on its causes, influences, problems, and other issues. In response to primary concerns expressed by scholars in China and other countries regarding this issue, the paper summarizes the major contents and findings of existing authoritative studies on shadow education in order to present a multi-dimensional picture of shadow education research and to provide useful guidelines for future explorations.

The Evolution of Shadow Education

Each country’s history of shadow education is unique due to its socioeconomic development and cultural background.

Shadow education is a relatively new phenomenon in China, having emerged as a result of the country’s reforms and opening up in the 1980s. During the early stages of reform, the government gradually relaxed restrictions on private education, recognizing that the public education supported by state revenue could no longer meet the growing demand for education. Private capital and the establishment of private schools have become critical solutions to the educational supply shortage problem. Private education, including tutoring, has begun to grow in popularity. Restricted by market size, social concepts, and educational policies, shadow education during this era consists primarily of in-school supplementary lessons and private tutoring via home visits (Pan & Wang, 2020). However, the State Council’s Decision on Deepening *Educational Reform and Comprehensively Promoting Quality Education*, as well as subsequent policies issued in 1999, completely prohibited in-school supplementary lessons, particularly those paid

for remedial programs, dealing a fatal blow to the nascent shadow education. The year 2003 marks a watershed moment in China's history of shadow education. The People's Republic of China's Private Education Promotion Law legalized profit-making private schools and tutoring institutions. In the years that followed, shadow education at the compulsory education level exploded in China, albeit in a disorderly and unregulated manner to some extent. In July 2021, the State Council's General Office issued *Opinions on Further Reducing the Burden of Homework and Off-Campus Training for Compulsory Education Students* (also known as the Double Reduction policy), with the goal of reducing student school workloads and off-campus tutoring burdens. As a result of the Double Reduction policy, the scale and scope of shadow education were significantly reduced. This means that numerous subject-specific off-campus training institutions will either close or restructure their operations. Even off-campus training behemoths like New Orient and Xueda Education are struggling to stay afloat. Despite the fact that some off-campus tutoring institutions have remained "underground" and continue to operate in the training market, the entire shadow education industry has taken a severe hit (Zhou, 2021).

The majority of Korean scholars agree that the establishment and growth of shadow education in South Korea are inextricably linked to high-stakes admission examinations. Thus, the development of shadow education in South Korea paralleled the dramatic changes in the country's high-stakes admission examinations and can be classified into three stages: the sprouting period, the period of complete prohibition, and the period of legalization. Between 1960 and 1980, South Korea rapidly expanded the size of colleges and universities under the influence of Western higher education systems, resulting in severe shortages of professors, infrastructure, and funding, which the Korean government was unable to resolve in a timely manner. It was forced to reduce the size of universities and limit enrollments. To compete for limited admissions, students must engage in private supplemental tutoring to bolster their competitiveness, accelerating the growth of shadow education (Bray & Lykins, 2012). In 1980, in order to alleviate the ever-increasing competition among candidates, the Korean Ministry of Education implemented a reform in which students' in-school test scores and practical performance served as admission credentials in place of the college entrance examination, and shadow education was completely prohibited. Despite the Ministry of Education's prohibition, the number of private tutoring institutes in South Korea increased from 381 in 1980 to 14,013 in 2000, demonstrating that there was a sizable market for shadow education and that governmental regulation was ineffective. In this context, South Korea's Ministry of Education issued the *Program for Preventing Overheated Shadow Education and Improving the Quality of Formal Education* in June 2000, signaling a shift away from outright prohibition toward legalization of shadow education. The program formally recognizes shadow education as a legal supplement to formal education and requires educational authorities to assess the impact of shadow education on educational equity across socioeconomic classes and to take necessary measures to coordinate the relationship between formal and shadow education (Byun, 2014).

Scholars discover that the history of shadow education in Japan is inextricably linked to the country's diploma-valued tradition, which places a premium on academic credentials, and to the deficiency created by the "Relaxing Education" reform. It has progressed through four stages: *laissez-faire*, oversight, cooperation, and consolidation. Prior to 1976, Japan allowed unrestricted development of shadow education, which was typically used by parents to assist their children in winning academic competitions and achieving higher levels of education (Yamato & Zhang, 2017). At this early stage, the Japanese government acknowledged the existence of shadow education but made no specific regulations or laws to govern it. In the early 1980s, as Japan's public schools became increasingly problematic, middle-class parents sought out private education for their children, believing that it would help them develop ideal learning habits and achieve greater academic success. Since then, the Japanese government has increased its focus on shadow education; in 1988, shadow education was classified as an education service industry, subject to regulation by the Ministry of Economy, Trade, and Industry (METI) and oversight by the Ministry of Education. In the 1990s, as the Relaxing Education reform gained momentum, weekly class hours and instructional content were reduced to allow for increased study time for the development of comprehensive competencies, which included students' autonomous learning abilities, independent thinking abilities, and living skills. At this point, a partnership between shadow education and classroom instruction was established, with the former serving as a vital platform for students to conduct after-school extracurricular activities. Japan began measuring student academic achievement in 2000 with the PISA tests, and average PISA scores in 2003 and 2006 decreased in comparison to 2000. In response to media scrutiny and criticism, public schools began amending their curricula and increasing instructional content. As a result, teachers were overworked. To alleviate teachers' workloads, the collaboration between shadow education institutions and public schools has been strengthened: teachers from shadow education institutions teach in public schools, primarily offering students services such as career planning and study counseling; shadow education supports rural education by providing off-campus supplemental tutoring (Bartlett et al., 2012). At present, shadow education in Japan has developed sustainably and has become an integral part of national education.

The Status Quo of Shadow Education

The extent to which shadow education exists in various countries has long been a subject of academic inquiry throughout the world. Data from the existing literature indicates that the growth of shadow education is generally upward-trending and has the potential to create a sizable industry if left unchecked by government policies.

Since the reform and opening up, China's shadow education sector has grown rapidly from a minuscule existence to a massive industry. The target group continues to grow, as does the age range of students participating in after-school tutoring. Chinese scholars have examined the extent to which off-campus supplementary tutoring exists from a variety of perspectives.

Zhao et al. (2021) report that the cumulative number of students enrolled in off-campus tutoring in China has reached 137 million, with 8.5 million teachers employed by approximately 200,000 private tutoring institutions. The 2020H1 Report of China Online Education Survey Data and Case Studies of Representative Enterprises indicates that the total market size of China's online education has increased from 221.8 billion CNY in 2016 to 414 billion CNY in 2017.

Dai (2012) calculated the percentages of students participating in shadow education at various education levels using data from the 2004 Survey of Education and Employment of Urban Residents in China: among all urban students surveyed, the participation rates for primary school, general junior secondary school, and general senior secondary school students were 73.8%, 65.6%, and 53.5%, respectively.

Xue (2015) represented the status quo of shadow education in China by examining students' average time spent in cram schools. Their daily average time commitment to after-school supplementary tutoring is 0.8 hours on working days (Monday to Friday) and 2.1 hours on weekends (Saturdays and Sundays).

However, with the implementation of the Double Reduction policy, limiting the development of shadow education has become a critical measure for relieving students' academic burden. This is a severe crackdown on the shadow education industry, which has resulted in the industry's demise. The rigorous implementation of the Double Reduction policy implies that no new institutions of compulsory education will be approved. Yang and Li (2022) discover that the number of shadow education institutions in Yunnan Province has decreased following the implementation of the Double Reduction policy. The total growth rate of shadow education institutions is approximately -33%, while subject-based shadow education institutions grow at a rate of -37%; the share of subject-based shadow education institutions in the total sector declines from 94% to 88%; and the cancellation rate exceeds 17%.

By contrast, data from Japanese and Korean scholars demonstrates that shadow education has achieved unprecedented popularity in Japan and South Korea at the moment. In recent years, as a result of the economic downturn, admission to prestigious schools and universities has become more critical to students' future job market competitiveness, resulting in a greater reliance on shadow education by Japanese and Korean students. Japan currently has approximately 55,000 private tutoring establishments, and approximately 33.7% of primary school students, 51.9% of junior secondary school students, and 29.3% of senior secondary school students attend after-school remedial classes. In 2020, the Japanese shadow education industry's total revenue will reach 470.29 billion yen. In comparison, South Korea's prevalence of "shadow education" is even more astounding. According to the New York Times, 75% of South Korean students are enrolled in 100,000 cram schools throughout the country. These large-scale cram schools serve as the backbone of the South Korean educational system, and the supplementary tutoring economy generates approximately 2.0997 trillion KRW each year. According to a Hyundai Research Institute (a South Korean think tank) report, the average Korean family spends nearly 20% of their income on extracurricular tutoring for their children (Kim, 2016). As a result, it is common for students throughout the

East Asian region to engage in extracurricular tutoring as a result of the region's intense competition. Shadow education in East Asia is currently characterized by high participation, widespread coverage, profitability, and rapid expansion.

Furthermore, the United Kingdom and Canada, which previously frowned on after-school tutoring, are beginning to recognize the importance of examinations, and shadow education now has a greater influence on their educational systems than ever before. It is rapidly expanding, despite its relatively small size for the time being. Ireson and Rushforth (2005) reported in their study that 18% of 11th grade students in the United Kingdom received remedial tutoring in mathematics in 2005.

Types and Forms of Shadow Education

According to the collected literature, research on shadow education's operational forms focuses on the operating agents, organizational forms, instructional modes, and tutoring content.

As per Ru and Yang (2018), the operating agents of shadow education fall into two categories: institutional and individual. Among Chinese students, the most popular shadow education institutions include New Oriental Education Group, Xueda Education, and TAL Education.

Shadow education can be classified into three types based on class size: class tutoring, group tutoring, and individual (one-to-one) tutoring; and based on instructional space, it can be classified as in-person or online instruction (Huang, 2020).

There are differences in the content of instruction between shadow education programs in different countries. Nonetheless, supplementary tutoring in languages (particularly native language and English), mathematics, and science is common around the world because these three subjects are core components of selective examinations, have the greatest impact on student academic performance, and are required for students interested in science and engineering (Peng, 2007). Approximately one-third of Chinese students currently participate in after-school supplementary tutoring. According to the results of the China Compulsory Education Quality Survey (2018), 43.8% and 23.4% of Chinese fourth- and eighth-grade students, respectively, participate in after-school mathematics tutoring. Additionally, shadow education provides tutoring for compulsory subjects such as Chinese, mathematics, and foreign languages, as well as training in arts and sports such as painting, dancing, and musical instrument playing. While Bray (2012) defines shadow education as subject-based after-school supplementary educational activities, China's unique entrance examination policy, which allows for additional scores for artistic and athletic ability, makes subjects such as painting, dancing, musical instrument playing, and sports examination-oriented for some students and classified as academic subjects in off-campus training schools.

Reasons for Participating in Shadow Education

The high rate of student participation in shadow education in East Asia is not only explained by the historical culture of “He who excels in learning will be chosen as an official,” but also by the importance parents place on investing in their children’s education. The continuous advancement of modern parents’ educational attainment results in an increased awareness of the critical role of knowledge in their children’s development. The parental belief that a high investment in child education results in a high return is at the root of shadow education’s explosive growth.

According to some scholars, the Confucianist tradition of highly valuing education may explain the growth of shadow education in East Asia. Education, as a critical component of social mobility, has enabled many people to advance socially. Although public school education has long since supplanted the imperial examination system (Ling, 2007), the concept of “scholarship is superior to anything else” remains deeply ingrained in the minds of East Asians, influencing their educational decision-making. As a result, studying diligently has become a widely accepted value in East Asian communities, particularly in highly selective societies such as China, Japan, and Korea, where modern education has inherited the imperial examination system’s qualities of high competitiveness and stakes. To differentiate themselves in various selections and examinations, students have no choice but to expand their knowledge through after-school shadow education (Chen & Wei, 2019).

Researchers argue that while grades and academic credentials remain critical criteria for distinguishing individuals, the importance of cram schools is undeniable. Despite urgent calls for academic burden reduction and comprehensive competence education, examinations remain the primary method of selecting talented individuals in East Asian countries (Gao, 2020). In an examination-oriented educational climate, students and parents place a premium on examination results. Those preparing for high school and college entrance examinations are particularly anxious. Regular mock exams and rankings will only instill fear in them, driving them to seek out ways to improve their competitiveness in the battles for school progression. When shadow education institutions exploit their irrational psychology by promising them an immediate and significant improvement in academic performance, they will naturally seek assistance (Yu & Jia, 2020). Moreover, the prevalence of shadow education is inextricably linked to our society’s “diploma fever.” Employers frequently view a high level of education as a sign of exceptional talent. The social emphasis on educational backgrounds exacerbates students’ sense of crisis and increases their willingness to engage in shadow education in order to ensure their success on entrance examinations.

Numerous studies focus their discussion on the influence of the middle class’s education anxiety on shadow education when they examine the reasons for participating in private supplementary tutoring. The excessive reliance on and pursuit of educational attainment on the part of the urban middle class stems largely from their anxiety about their children’s ability to maintain or even advance family social status. As a result, they exaggerate the impact of education on their children’s futures, believing that educational success can stave off the decline of their social status and are thus willing to stake nearly everything on their children’s education (Tan, 2010). There is, however, a

significant disparity between the quality of public education and the educational expectations of urban middle-class parents. They can hardly accept advocates for “happy education” and “academic burden reduction” in an examination-oriented educational system. Utilizing parents’ mistrust of public education, shadow education institutions entice middle-class families to join supplementary tutoring through exaggerated advertisements such as “guaranteed admission to expected universities.”

According to some scholars, the inadequacy of home tutoring allows shadow education to thrive. Parents generally feel less capable of providing effective academic tutoring as their children grow older. Given the perceived inferiority of home tutoring to professional shadow education institutions, most parents simply delegate the responsibility of supervising their children’s after-school learning to off-campus tutoring institutions (Hu, Fan, & Ding, 2015). Additionally, with a fast-paced urban lifestyle and heavy workloads, parents often lack the time necessary to accompany their children. Enrolling their children in multiple tutoring classes is thus a viable option because it can provide a safe haven for them to stay as well as appropriate supervision over their after-school studies (Zhang & Bray, 2020).

Besides that, Xue (2015) notes that while parents may make decisions regarding after-school tutoring; students are the true participants in shadow education. The majority of students participates voluntarily, out of a desire for self-improvement or peer pressure. Top students are even more motivated to pursue supplemental tutoring than students with medium or low academic levels, as they face greater pressures and must work harder to maintain their current rankings. Pan and Wang (2020) observe that, as shadow education has become ubiquitous, participation in it has developed into a shared identity for students. Non-participants become the minority. In public schools’ class-based teaching system, learning content and levels of difficulty are typically standardized for the entire class. Students who do not participate in shadow education, a small minority, are likely to fall behind in their academic progress. Teachers may even suggest that they enroll in after-school remedial tutoring to help them catch up with their classmates.

The Impact of Shadow Education

Existing research on the impact of shadow education considers both its benefits and drawbacks. On the one hand, it supplements traditional education by meeting students’ unique needs. On the other hand, the profit-driven nature of off-campus training institutions frequently results in exaggerated advertisements that prey on parents’ vulnerable psychology and coerce them into blindly participating in shadow education. Excessive after-school tutoring and parental intervention are detrimental to students’ physical and mental health. Furthermore, whether market-oriented and commercialized operations of shadow education exacerbate educational inequality has sparked global debates in academia.

Thus, according to research on the effect of shadow education on student development, shadow education can have a detrimental effect on students’ health and mo-

tivation to learn. In a survey of junior secondary school students in Beijing, Zhao et al. (2021) discover that subject-based off-campus tutoring significantly reduces students' sleep time. Shadow education, in addition to intensive school learning, consumes additional time and energy from students, undoubtedly increasing their academic burden and robbing them of their learning autonomy. Moreover, excessive after-school tutoring dampens students' enthusiasm for self-directed learning (Zhao et al., 2021). Over time, students may develop academic fatigue and become inefficient learners (Bray, 2012). Likewise, the primary appeal of shadow education is its ability to improve student test scores. Through excessive exam skill training, students are led to place an emphasis on exam results rather than the process of knowledge acquisition, which is detrimental to the development of students' creativity and critical thinking. Correspondingly, shadow education introduces social competition into children's lives at an early age and encourages them to view the world through a utilitarian lens, which runs counter to the principle of healthy child development (Peng, 2007). Peng (2018) believes that excessive extracurricular tutoring burdens students academically and can even make them obsessive about examinations but apathetic about life. According to some researchers, excessive shadow education is detrimental to students' social development, resulting in their estrangement from family members. If children are forced to spend excessive time on after-school tutoring and are unable to communicate with their parents, the love generated by their natural bonds will deteriorate, preventing students from developing a sound personality (Mustary, 2019).

In terms of shadow education's influence on school instruction, some researchers argue that advanced learning conducted in private tutoring institutions impedes the progress of regular school instruction. Students' reliance on after-school tutoring may result in a variety of negative behaviors, including a lack of respect for mainstream school teachers, an inability to concentrate in class, and a preference for ready answers rather than independent thinking (Zhou, 2008).

Through visits and interviews, some scholars have conducted in-depth investigations into the operation mechanisms of shadow education and discovered problems with tutoring institutions such as unregulated operation models, ambiguous objectives, and disorganized management. The quality of tutoring varies between institutions; some training institutions exaggerate the benefits of supplemental tutoring (Xue, 2015). Liu (2020) expresses concern about the tutors' teaching credentials in these institutions. The majority of tutoring institution teachers is college students or recent graduates who lack formal professional training and classroom experience. This may result in inconsistency between their tutoring and the state's official curriculum standards. While some after-school tutoring institutions employ retired "famous teachers" as a draw, little is known about whether their teaching style and educational philosophy meet the new requirements of the reformed curriculum.

The primary effect of shadow education on students' families is an increase in educational expenses. Xue (2021) concluded from his research that excessive emphasis on children's education has resulted in a significant increase in family educational expenditure in China. Half of the families involved in shadow education spend between

2,000 and 10,000 CNY per year on each primary or secondary school student, and 13.7% spend more than 20,000 CNY. Economically advantaged families are most willing to spend money on supplemental education for their children with mediocre academic performance (Zhi & Ding, 2020).

Numerous studies conclusively demonstrate that shadow education jeopardizes educational equity. Because shadow education is a for-profit endeavor, it necessitates economic reserves on the part of participants. Parents' economic circumstances influence their decision to enroll their children in after-school tutoring, resulting in unequal opportunities for different students to receive shadow education (Fan, 2008). Hu and Fan (2021) discover that socioeconomically advantaged families invest significantly more in remedial tutoring than low-income families, based on a sample analysis of Shanghai students in 2012. Participating in shadow education converts their economic capital to cultural expenditure, enhancing their competitiveness in school progression and exacerbating academic achievement disparities between children from diverse family backgrounds. Besides that, it is believed that the prevalence of after-school tutoring reduces public school teachers' commitment to and preparation for teaching, thereby impairing the learning outcomes of non-participants, whereas students from wealthy families can easily obtain compensation from private tutoring services (Husslein, 1997).

Apart from the aforementioned negative influences, numerous scholars have discussed the positive effects of shadow education. The large-class teaching style prevalent in mainstream education is typically well-suited to middle-level students but cannot meet the needs of every student. The teaching content may be too simple for high-achieving students, while it may be too difficult for low-achieving students. Shadow education can compensate for this shortcoming by providing students with customized instruction, allowing students with varying aptitudes to maximize their learning effectiveness. In this sense, shadow education has incorporated some of the more advanced concepts advocated in China's new curriculum reform in response to public demand for a higher standard of education (Huang, 2019). According to Loyalka and Zakharov (2016), shadow education has a beneficial effect on students' mental health. Effective after-school private tutoring increases students' confidence in academic competition; the broader and more in-depth knowledge gained through supplementary tutoring increases students' interest in the school curriculum. Per some scholars, shadow education has a beneficial effect on employment from a socioeconomic standpoint. It supports a substantial number of private training institutions and provides employment opportunities for a large number of college students and graduates. Furthermore, the substantial profits it generates assist in promoting local economic development (Liu, 2020).

Whether or not shadow education has a beneficial effect on student academic progress is a point of contention at the moment. Some researchers maintain that shadow education significantly improves student academic performance (Dang & Wells, 2007); others maintain that shadow education has a detrimental effect on student academic achievement (Lee et al., 2004); still others maintain that it has no discernible effect on student learning outcomes (Smyth, 2009). When examining the effect of shadow education on time differences, Xu (2020) observes that private tutoring between Monday and

Friday has the potential to degrade student academic performance by depriving students of time for relaxation, whereas extra tutoring on weekends has the potential to improve student academic achievement by properly utilizing weekend time. Smyth (2009) corroborates the preceding finding by arguing that student academic performance is not only related to their participation in shadow education but also to the time period during which they participate; from Monday to Friday, students should focus on the learning tasks assigned by teachers and be guaranteed adequate time for relaxation and recreation. Additionally, some research indicates that the duration of private tutoring is related to the academic achievement of students to varying degrees. When compared to no tutoring, private tutoring of more than three hours per week has been shown to significantly improve student academic performance; weekly supplementary tutoring of 1-2 hours has no significant effect on student academic results; and weekly tutoring of less than one hour has been shown to significantly degrade student academic achievement (Wang & Li, 2014). From their investigations into rural after-school tutoring at the compulsory education level, Pang et al. (2017) conclude that private remedial tutoring cannot effectively improve rural student mathematics results. They attribute this to a lack of high-quality educational resources and ineffective instruction methods used by rural tutors.

Suggestions for Regulating Shadow Education

Researchers agree that the goal of regulating shadow education is to optimize the educational service system in such a way that it can meet students' needs for additional instruction without jeopardizing the equity and fairness of compulsory education. It is critical to enhance the quality of mainstream education and to equalize access to high-quality educational resources while also establishing an effective regulatory mechanism to steer shadow education in a positive direction. They are the diametric opposites of one another.

Bray (2013) summarizes the global regulatory framework for shadow education and proposes six modes: *laissez faire*, supervision without intervention, adaptation with control, encouraging, blended, and prohibitive. He suggests that when developing policies and regulations for shadow education, relevant authorities should take into account the history and current state of the practice in their respective countries.

Despite the fact that the majority of countries in East Asia have issued broad guidelines for the management of after-school tutoring institutions, Li (2015) notes that there are no detailed regulations governing their specific management operations. To ensure effective regulation and governance in the shadow education sector, the country should issue a set of unified regulatory policies aimed at strengthening approval of and oversight of after-school tutoring institutions. The primary regulatory targets are teaching and training qualifications, charging standards, and teacher qualification certificates issued by tutoring institutions. The other critical step that should be taken at the national level is to define the roles and responsibilities of various regulatory authorities in order

to eliminate “blind spots” in supervision and to close down unqualified institutions in the shadow education industry (Yang, 2012).

According to certain studies, the primary strategy for regulating shadow education is to improve the quality of public education. As a secondary means of preventing the excessive expansion of shadow education, the educational community should work to improve formal public education by identifying its shortcomings and conducting extensive educational and teaching research. To increase access to high-quality public educational resources and close the gap between demand and supply of quality public education, teacher exchange and rotation in urban and rural areas should be encouraged, as should various forms of inter-school collaboration such as school alliances and educational conglomerates (Gao, 2020). Huang and Xing (2020) propose that public schools should facilitate cross-school teacher exchanges or advanced in-service training in order to strengthen teachers’ professional capabilities, address inequitable distribution of high-quality educational resources, and reduce parents’ distrust of public schools and excessive reliance on tutoring institutions.

As previously discussed in this paper, middle-and high-income families enjoy distinct advantages when it comes to accessing shadow education resources, whereas low-income families face significant disadvantages. As a result, the government is expected to play a critical role in balancing educational resources in order to counteract the detrimental effects of shadow education. Baker et al. (2002) argue that the government can provide reasonable educational compensation to students from low-income families and expand access to learning resources and educational opportunities. For instance, in the United States, the government-funded After-School Program promotes students’ personalized development and educational equity through a variety of after-school activities. Similarly, in the *Guiding Opinions on After-School Services for Primary and Secondary School Students*, the Chinese government advocates for free tutoring and assistance for students experiencing learning difficulties, as well as after-school services for children who are left behind or who migrate with their migrant-worker parents, in order to safeguard the rights and interests of the vulnerable population (Xue, 2016). Furthermore, the rapid growth of the Internet has aided in the advancement of educational equity. The educational community should make full use of “Internet+” and other integration mechanisms. For instance, a comprehensive subject-based teaching resource library could be established to enable students to learn and communicate online, allowing students with learning disabilities to receive assistance whenever necessary.

Moreover, Liu (2020) believes that educational reform is necessary to address the issue of shadow education. Educational development is guided by the educational evaluation system. At the moment, the primary method of selection in China and other East Asian countries is examination-based evaluation. The overemphasis on summative assessments inevitably results in an extreme situation in which test scores and school rankings are all that matter. We can use shadow education rationally only if we encourage the transformation of the mainstream education evaluation system and incorporate formative assessment into overall student assessment. Likewise, various forms of parent

education can be used to guide parents toward a scientific perspective on education, such as parent meetings and community-based education activities. Parents who are anxiety-free and equipped with reasonable educational concepts can contribute to the development of a healthy educational environment.

Limitations of Existing Studies of Shadow Education

The review of existing literature on shadow education in China and abroad also identifies the subject's limitations and clarifies the prospects for future research. The majority of studies on shadow education use data from large-scale questionnaire surveys, which may limit the depth of the investigations due to insufficient coverage in the question design or a lack of rigorous definitions of major concepts. In terms of sampling, the majority of analyses use compulsory education students as subjects, rarely including parents, teachers, or college students, jeopardizing the completeness and objectivity of the investigations. Additionally, there are few studies on public school teachers' involvement in off-campus tutoring and in shadow education regulatory policies. In future studies, researchers should employ a broader range of analytical techniques and a broader range of subjects in order to obtain more pertinent and effective results.

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Received: 28 February 2022

Revised: 18 March 2022

Accepted: 06 April 2022