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Reviewing China's Unequal Education System Based on Ecological System Theory

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ABSTRACT

This review examines China's educational system the "two-track system" and rural education challenges through the lens of Bronfenbrenner's Ecology System Theory. Using a theoretical framework to review related literature can support readers in understanding the intricate interplay between societal factors, cultural influences, policy decisions, and specific issues. Therefore, this aims to understand how the ecological environment shapes rural education's development until today, and the Ecological System Theory is used as a theoretical guidance. To find the potential answer to proposed research questions (RQ): RQ 1. What is the background of rural China and the "two-track system" of education? RQ 2. What is the difference between China's urban education and rural education? RQ 3. How does the related environment influence China's educational system? By addressing this fundamental issue, a comprehensive review is provided by following the ecology system theory from the macro-system level to the micro-system.

I. Introduction

The evolution of China's education system over the past decades has given rise to what is distinctly termed a "two-track system" (Rozelle & Hell, 2020). This divergence implies a broader socioeconomic landscape wherein urban and rural sectors represent two contrasting developmental narratives. In the rich urban regions, cities such as Beijing, Shanghai, and Guangzhou are rapidly developing to China's rise on the global stage. Urban educational institutions, predominantly in major cities like Beijing, Shanghai, and Guangzhou, enjoy superior infrastructure, diverse curricula, and a rich pool of qualified educators (H. R. Zhang et al., 2021). State-of-the-art infrastructure, advanced technological integration, and globally informed curricula are involved in these urban schools. The combination of a progressive academic environment and rich extracurricular opportunities leads to a conducive ecosystem for urban students' holistic development (Wang, 2017). This urban advantage, accentuated by a wide range of extracurricular opportunities and enriched learning resources, often leads to elevated academic outcomes, including superior performance in college entrance exams (Peña-López, 2019).

Conversely, the rural educational narrative is facing serious challenges. Schools in disadvantaged rural areas are usually with the legacies of historical neglect, have infrastructural deficits, and are frequently under-resourced (OECD, 2016; Stanford University, 2019a). The scarcity of trained educators further compounds the issue. The "substitute teacher" phenomenon, wherein individuals without formal teaching credentials are roped in to address the educator vacuum, is symptomatic of this systemic challenge (X. Wang et al., 2023). Hence, remote rural areas' educational environment is far left behind in urban regions, which is chronically difficult to catch up with the level of excellence observed in urban counterparts. The ramifications of this divide are multifaceted and deeply consequential (Rozelle & Hell, 2020). For example, rural students face impediments in accessing quality education and, subsequently, elite universities (Fong, 2009; Rozelle & Hell, 2020; X. Wang et al., 2023).

Given the persistent inequality in China's education system, the public naturally questions: Why and how does this divided "two-track" system exist in China? In the quest to comprehend the roots and ramifications of this disparity, the Ecology Systems Theory provides a promising lens to review this complex issue from a

systematic approach with entangled environmental factors. By viewing China's divided education system as an entity within concentric layers of environmental systems from the immediate microsystem of family and school to the broader macrosystem of societal beliefs and policies this theory aids in elucidating how various environmental factors have conspired to shape the present scenario. For instance, socio-economic policies, regional development priorities, and cultural values, among others, can be understood as contributors to the evolving educational landscape.

A. Ecology Systems Theory

Bronfenbrenner's Ecology Systems Theory (1979) presents a valuable approach to analyzing the dynamic interaction between individuals and their environment. This theory provides a comprehensive understanding of human development by considering the various contexts and systems that influence an individual's growth and behavior. To be specific, Bronfenbrenner (1979, 1986) first proposed the theoretical framework of the "person in context" and conceptualized a model of human development as a multi-layered set of inter-connected systems (ecological systems) to address the individual's lifespan development related to the relationship with their ecological environment.

According to this theory, the individual's development is not isolated and static, it is enmeshed in various ecosystems, from the most proximal system to the larger systems and then to the macro system that includes society, group decisions, and culture. In this study, the ecology system theory is the rationale for the contextual review. The fundamental principle of the concept is the bi-directional interactions between individuals and the environment. Applying this approach to a macro level, we can gain insight into how a dynamic ecological framework has shaped the evolution of China's "two-track" educational system divided rural education and urban education. This framework encompasses the interactions and activities of individuals and the environment, spanning from historical influences on the present day. For example, the multi-layered nested figure below is a visualized graphic based on the concept of eco-system theory, presenting China's rural education as a confounding issue, its intangible interaction with the context at different levels (Figure 1).

B. Research Question

Applying ecology systems theory to guide this review can lead to a looking at the unequal education system within a holistic context of interrelated systems, from immediate surroundings to broader societal structures. The goal is to understand how the "two-track" system interacts and is influenced by the ecological system. Although there were a few previous studies that have reviewed the unequal "two-track" system (Lo, 2017), there is a lacuna of research that holistically combines both the unequal "two-track" system and the Ecology Systems Theory to provide a comprehensive understanding of specific aspects or phenomena. To make a moderate contribution to this research gap, we proposed the following research questions (RQ), and tried to answer these questions by reviewing existing literature.

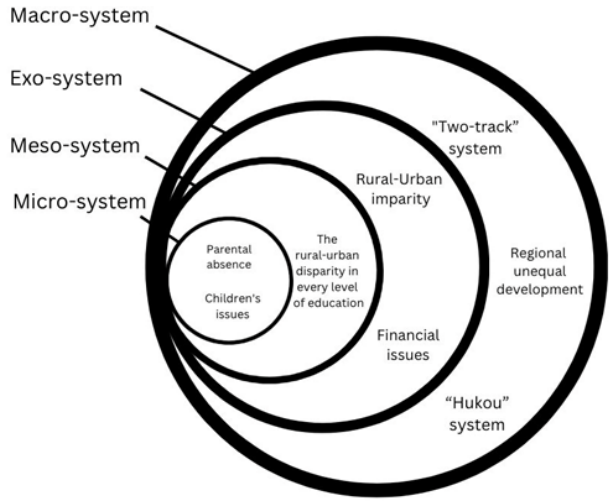

Fig. 1. Keywords of China's educational system in the ecology system

- RQ 1. What is the background of rural China and the "two-track system" of education?
- RQ 2. What is the difference between China's urban education and rural education?
- RQ 3. How does the related environment influence China's educational system?

Also, to address this fundamental issue in China's education system, a comprehensive review will follow the ecology system theory from the macro-system level to the micro-system.

C. Defining Rural Education in China

Education in rural China refers to the educational system and practices in the country's rural areas. Rural regions in China often face unique challenges compared to their urban counterparts, including limited resources, inadequate infrastructure, and a lack of qualified teachers. These factors contribute to significant educational opportunities and outcomes disparities between rural and urban areas. In recent years, the Chinese government has strongly emphasized improving rural education to bridge this gap. Various initiatives have been implemented to enhance access to quality education in rural areas, such as providing better school facilities, teacher training programs, and modern teaching methods. Efforts have also been made to address high dropout rates and the urban-rural education divide. However, significant challenges persist.

Identifying the complexity of the issue, I employ a deductive way to understand the problem, that is, making use of a theoretical framework that integrates the systematic logic, from the macro level to the micro level,

to analyze China's unequal educational system, including factors involved in shaping these inequalities. Given that educational policy development and procedures are inseparable from environmental influence, this study employs Bronfenbrenner's ecological system theory as the rational bedrock to present the chronic disparity in China's educational system (King et al., 2005).

D. A Critical Aspect

How the ecological environment shapes rural education's development till today is a critical aspect to explore in the relevant literature. Because this critical inquiry is a step to glimpse the intricate relationship between the ecological context and the educational system, to provide a comprehensive response to this question, it is crucial to consider the multifaceted and context-specific factors that have played a role in shaping rural education. These factors encompass historical, practical, economic, intergenerational, and interregional aspects. To address this question comprehensively, the analysis proceeds through different levels of the ecological systems framework.

Beginning with the macro-system level, a broad perspective is taken to examine the overarching societal and cultural influences on rural education (Bronfenbrenner, 1979), including national strategy for education, government policies, rural development, etc.

Next, the exo-system level focuses on the broader systems and institutions surrounding and affecting the individual's immediate context (Bronfenbrenner, 1979). This level includes factors such as the gap between urban and rural China, funding for education, and human resources in education.

Further exploration is the meso-system level, where these different micro-systems influence and impact each other (Bronfenbrenner, 1979). It recognizes the dynamics, interactions, and interdependencies between these micro-systems. This includes the main disparity of each level's education in urban and rural China – i.e., early years, primary level, secondary level, and higher education.

Finally, the micro-system level is the innermost circle, referring to the immediate and direct experiences of individuals within the rural education system This level includes the individual's interaction with the proximal surroundings (Bronfenbrenner, 1979).

E. Macro-system: Rural education's background and the fundamental inequalities (refer to PRQ 1)

The macro-system is the highest level in Bronfenbrenner's ecological systems framework. It refers to the broad societal, cultural, and economic influences that shape individuals and their development. At this level, the focus is on the larger systems and structures that impact the individual's immediate environment (Bronfenbrenner, 1979). At the macro level, the emphasis is on understanding the broader context in which individuals and their immediate settings exist. This includes examining the social norms, cultural values, economic policies, and political systems that influence the overall educational landscape in each society (Newman & Newman, 2020b). In education, the macro-systems level analysis involves considering national or regional educational policies, governmental regulations, funding and resource allocation, cultural beliefs and values related to education, and broader social and economic factors that impact educational opportunities and outcomes (Mc Guckin & Minton, 2014).

Therefore, to answer RQ 1. What is the background of rural China and the "two-track system" of education? RQ 2. What is the background of rural China and the "two-track system" of education? And RQ 3. What is the difference between China's urban education and rural education? I first explore how factors shape the educational systems, structures, and practices within society under the macro-system level of this framework.

1) Socioeconomic Background of Rural Development in China

According to Rozelle & Hell, (2020), China's dominant narrative has been constant development and an ever-developing economy. Nonetheless, there is an invisible side - rural China - a place of evident left-behind education, underrated issues, and chronic under-development villages (Rozelle & Hell, 2020). It is vast and uncompromising, demonstrating a deep chasm with urban China, and has been ignored by the well-educated urban throng and unacknowledged by the rapidly growing national economy.

At a macro-system level, inequality between China's rural and urban society is expanding (Rozelle & Hell, 2020; Shi et al., 2015; H. Wang et al., 2022). One of the primary obstacles to the sustainable development of China's rural regions is the lack of investment and general resource constraints among rural areas (Zhan, 2005). Research has indicated that most rural residents have lower incomes than their urban counterparts - the disposable income of urban households stands at 39,251 Chinese Yuan (5,465.27 US dollars) per capita per year and 16,617 Chinese Yuan (2,313.73 US dollars) for rural households (National Bureau of Statistics of China, 2019). In the meantime, urbanization progresses rapidly, resulting in further losses of cultivated land, and most rural adults, including parents, must work far away from home for extended periods. The indirect result of this population movement has been a further reduction in educational resources in rural China.

2) Divided Urban-Rural Education - "Two-track" system and "Hukou" system (PRQ 1)

The existence of the "two-track" system was asserted in the "Decision on the Reform of the Education System" (the State Council, 1951) and in the "Directive Concerning the Reorganization and Enhancement of Primary Education" (the State Council, 1953) ((Hannum, 1999).

Since China was a country of limited capital but still expected to produce qualified experts for modernization, the government decided to support several key urban schools to develop first (i.e., Track 1). Once the economic situation was sufficiently improved, it was possible to fund the educational system on a large scale (i.e., Track 2) (Fu, 2005). As a result, A World Bank – Chinese Ministry of Education joint report (Johnstone et al., 1998) confirmed that the disparity in educational opportunities is 5.8 times between China's rural and urban regions. Urban schools are usually sponsored with remarkably more significant investments than rural schools, and urban students with more and better educational opportunities (Hayhoe, 2019).

Moreover, another ever-existing system profoundly influenced rural residents the "Hukou" system, a political-institutional arrangement built on an unfair household registration system. A "Hukou" is the registered residency status of a particular individual in this system, which officially records a person as a permanent resident of an area and includes identifying information such as name, parents, spouse, and date of birth (Cheng, T., & Selden, 1994). Under this system, all people are divided at birth into two categories - rural or urban. This status affects everyone's life chances in ways, for example, education, health care, and retirement pension (Rozelle & Hell, 2020). Focusing on education, due to the "Hukou" restriction, rural students cannot move freely to urban areas where educational resources are more and better and have the same education as their urban counterparts.

F. Exo-system: the Imparity between Urban Education and Rural Education (PRQ 2)

According to Bronfenbrenner, (1979), the exo-system is a system formed by one or more settings where the developing individual is not an active participant but in which events occur that influence or are influenced by what happens in that setting. It consists of the social structures and institutions that may not directly interact with the individual but impact their development. These external systems can indirectly affect a person's life through their influence on the microsystem. The exo-system level encompasses various social structures and institutions surrounding individuals and shaping their experiences. Examples of impact factors at this level include government agencies, religious organizations, local communities, healthcare systems, legal systems, and mass media. These structures and institutions provide a broader context within which individuals operate (Mc Guckin & Minton, 2014).

When examining the connections to rural China, numerous external factors associated with the exo-system level have the potential to impact the country's rural educational development, such as financial issues, natural conditions, and teacher shortages. These factors can manifest in both direct and indirect ways, and they often include issues such as insufficient investments and unfavorable natural conditions. It is essential to recognize that these external factors, including the lack of investment and poor natural conditions, interact with other levels of the ecological systems theory. These ever-existing hardships can influence rural education's microsystem (immediate environment), affecting their experiences within the family, school, and community. The negative consequences of these eco-system level factors can also trickle down to the microsystem, exacerbating the challenges faced by rural students and impeding their educational development (Townsend et al., 2020).

1) Under-investment Rural Education

One significant challenge rural China face is the lack of educational resources and infrastructure investment. Due to various economic and social factors, rural areas often receive fewer resources and funding than urban regions. This investment disparity hampers educational institutions' development and limits the opportunities available to rural students. Insufficient funding leads to a scarcity of qualified teachers, inadequate facilities, outdated teaching materials, and limited access to technology—all directly hindering educational progress (OECD, 2018; Rozelle & Hell, 2020).

The difficulty in providing quality rural education and retaining equality between the urban-rural educational model was caused by scarce financial investment. First, the reason is that the government's investment in education has always been insufficient, and it has only improved in recent years. For instance, in 2012, China's fiscal education budget as a percentage of Gross Domestic Product (GDP) was 4 percent, the first time the Chinese government had invested much money in education (OECD, 2016). However, it is still below the 5 percent of GDP that OECD countries spend on average on education (OECD, 2020).

Moreover, the Ministry of Education stipulates that funds for compulsory education shall be jointly provided by the central state government and the local council (Fan, 2008). However, this bill does not clearly define the proportion of funds the local council should offer, so each local council usually contributes a percentage from 20 percent to 80 percent, depending on each local government's financial situation (N. Li, 2018). Hence, there is typically little budget for the rural educational system because Western rural regions' (Figure 2) governments always have low fiscal revenue. In contrast, prosperous East coastal regions (Figure 3) governments can boost their educational resources in many ways. As a result, the educational investment from one urban council and the next varies dramatically because of their disparate financial situation.

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Fig. 2. Western Regions

Fig. 3. East coastal regions

2) Poor Natural Conditions and the Lack of Teachers

At the exo-system level, a systemic variable often overlooked in efforts to pinpoint impacts on development is the geographic locale (Iruka et al., 2020). The living environment for rural children in Western China has inequalities (Dürr, 1985; Lo, 2017). These areas experience structural and environmental problems, such as mountainous terrain, disadvantaged transportation, stagnating economics, and a lack of essential public services. These harsh natural and geographical conditions discourage teachers from working in rural areas. Because of the lack of (good) teachers, the rural education system is inherently far behind the urban areas (H. Wang et al., 2022).

In summary, the exo-system level in rural China unveils the significance of geographic locale as a frequently overlooked systemic variable impacting development. Western China's rural areas contend with unequal living environments characterized by structural and environmental issues such as mountainous terrain, limited transportation, stagnant economics, and a lack of essential public services. These formidable natural and geographical conditions deter teachers from working in rural areas, creating an inherent educational disparity between rural and urban regions.

G. Meso-system: The difference between urban and rural education at each level (PRQ 2)

The mesosystem of the ecological model is a set of inter-relations between two or more settings in which the developing person becomes an active participant (Bronfenbrenner, 1986). It consists of the interactions between two or more environments in which the developing person actively engages (Newman & Newman, 2020a). The mesosystem recognizes that individuals experience transitions and changes as they move between different settings. For example, the transition from home to school or from school to work can have significant implications for development. The mesosystem level highlights the importance of support and continuity during these transitions to facilitate successful adaptation. It also considers the consistency or inconsistency of messages and practices between microsystems. When the values, expectations, and behaviors across different settings are congruent, it promotes healthy development. However, inconsistencies or conflicts in messages, rules, or expectations between microsystems can create stress or confusion for the individual (Anning & Edwards, 2006).

Examining education across these levels can comprehensively understand the disparities between rural and urban contexts. The mesosystem level highlights the interconnectedness and interactions between different microsystems, such as family, school, and community. In the case of China's educational system, rural and urban environments constitute distinct microsystems that influence an individual's development. To gain insight into the systemic inequalities in China's "two-track" system (PRQ 1), examining and comparing the rural and urban educational systems at each level, including early childhood education, elementary education, secondary education, and higher education. This comparative analysis aligns with the mesosystem level of Bronfenbrenner's ecological systems theory (PRQ 2).

1) Early Childhood Education

Given that early childhood education (ECE) is not included in the national education system (Bullough & Palaiologou, 2020), kindergartens are usually run by local educational departments, with several of them being private enterprises (Zhu, 2009). The allocation of early childhood education (ECE) resources in China is significantly unbalanced between urban and rural areas. Official statistics show that in 2012 there were 26,459,845 kindergartens in urban areas but only 10,397,779 in rural areas (See Table 1). The three-year ECE program gross enrolment rates of urban and rural kindergartens were 89.10 percent and 29.69 percent (Stokes et al., 2000),

which presents a disparity of 59.41 percent (see Table 2 below) (Ministry of Education of People's Republic of China, 2015).

Table 1. The Number of Urban and Rural Children in Kindergartens, 2006 to 2012

Year	National Level	Urban Areas		Rural Areas	
		Total	Percent	Total	Percent
2006	22,638,509	12,160,090	53.71	10,478,419	46.29
2007	23,488,300	13,157,106	56.02	10,331,194	43.98
2008	24,749,600	14,076,041	56.87	10,673,559	43.13
2009	26,578,141	15,318,161	57.63	11,259,980	42.37
2010	29,766,695	17,626,405	59.22	12,140,290	40.78
2011	34,244,456	24,306,519	70.98	9,937,937	29.02
2012	36,857,624	26,459,845	71.79	10,397,779	28.21

Table 2. The Gross Enrollment Rate (Stokes et al.) of Urban and Rural Kindergartens, 2006 to 2012

Year	Three-year GER			One-year GER		
	Urban Areas	Rural Areas	Disparity	Urban Areas	Rural Areas	Disparity
2006	58.05	29.63	28.42	72.08	50.14	21.94
2007	62.11	29.86	32.25	74.85	49.51	25.34
2008	65.63	31.73	33.90	78.96	50.78	28.18
2009	67.72	33.13	34.59	77.05	49.03	28.02
2010	69.76	34.95	34.81	75.68	48.12	27.56
2011	87.72	28.59	59.13	76.37	29.64	46.73
2012	89.10	26.69	59.42	81.24	31.70	49.53

In urban areas, especially the Eastern coastal areas, participation in an ECE program is a crucial stage of an individual's lifelong education. Kindergartens in coastal areas are almost in line with international standards. By contrast, ECE is the weakest section in China's rural education system (Zhou, 2011), and the quantity and quality of kindergartens in China's poverty-stricken rural areas are low (see Table 2). Apart from the socio-economic reasons, the issue is compounded by the private and illegal rural ECE services across rural child play centers, as they are unlicensed and not quality assured by the government's accreditation and management system (Hong et al., 2015), and the fact that ECE teachers are scarce in these areas. For example, the number of ECE teachers in urban areas (N=1,249,674) was 5.52 times higher than in rural areas in 2012, and many rural teachers did not meet the basic requirements regarding quality and qualification (Hayhoe, 2019). Since research has shown that participation in ECE is vital for children's lifelong development, children without access to ECE could have lower levels of cognition, language, arithmetic, mental and physical fitness, as well as social skills (He et al., 2022; Stanford University, 2019b).

2) impacted in Elementary Education

In China, the nine years of compulsory education start from elementary education. Both public and private primary schools in advanced urban areas have good reputations. Even so, in urban China, many education services provided by mainstream schools cannot meet urban parents' requirements; these parents invest heavily in their children's education and believe they need extra elementary curricula from the after-school market (X. Lin, 2019). By contrast, elementary education in rural areas is problematic. For instance, the number of rural school-age children continues to decline. Since the rural councils take administrative responsibilities for local education because of the "tow-track" system, this has imposed a considerable financial burden on local rural residents, as well as several rural primary and secondary schools that were small since there are few qualified teachers could provide quality teaching (Rao & Ye, 2016).

Schooling at the primary level was not always universal in the rural region, particularly in terms of remote areas, although both "The Compulsory Education Law" (1986) and "The Rule for the Implementation of the Compulsory Education Law of the People's Republic of China" (1992) was introduced in an attempt to address this, still, rural elementary schools are facing dilemma such as insufficient teachers and students dropping off (Lu et al., 2016).

3) Inequalities in Secondary Education

Secondary education is considered one of the most essential driving forces for promoting a country's economic development (Ozturk, 2008). Secondary education in China's urban coastal cities has been valued as a more successful model than in other OECD countries. According to the OECD's Programme for International Student Assessment (PISA) data for 2018 (15-year-old pupil's scholastic comprehensive performance and capabilities concerning mathematics, science, and reading, China's four regions - Beijing, Shanghai, Jiangsu, and Zhejiang were ranked first place among 77 countries (OECD, 2018). This result is evidence that secondary education in these Chinese urban areas is at the forefront of the OECD level.

In stark contrast, secondary education in rural areas lags far behind that of its urban counterpart, with less than 40 percent of students in attendance at high school in China's impoverished rural areas in comparison to urban areas, where the rate is 90 percent (Shi et al., 2015). Poorer rural students are more likely to drop out because they are disproportionately affected by the costs of continuing their education. High school education is not included in the nine-year compulsory education mechanism. The tuition fees for high school in China are the highest in the world, which is known to impose a significant burden on many rural families. On the other hand, and perhaps even more significantly, the rigorous academic requirements for academic high school admission set a severe barrier to rural students (Shi et al., 2015). The middle school dropout rate is higher than that of elementary education, which is approximately 25 percent of the population in disadvantaged rural areas. Research has indicated that apart from the economic factors, secondary school students often drop out of school because of five elements: (i) poor academic performance, (ii) higher prevalence among males than females, (iii) middle school students who are older, (iv) low-income family conditions, and (v) students with psychological issues or mental issues (Shi et al., 2015).

4) Rural-Urban Differences in Opportunities to Obtain Higher Education

In China, rural-urban differences in the opportunities to obtain higher education qualifications reflect structural issues within the educational system (Cheng, 2009; Houxiong, 2011; L. Wang, 2011). The urban-rural inequalities in higher education are also a direct result of the "two-track" education system and the "Hukou" system (see section 8.l) (M. Li & Yang, 2013). The central government has highly controlled higher education opportunities for decades. The distribution of these opportunities has been significantly uneven and imbalanced. In particular, the higher education admission system has been segmented into different levels based on the administrative and geographical units of provinces and municipalities. Each institution designates discrepant admission quotas to other regions and municipalities (M. Li & Yang, 2013). For example, a student from the capital city or a financially centered area would generally be scoreless within the admission process than students from other regions. The planned enrolment figures for higher education institutions are preferentially distributed to metropolitan areas, such as Beijing and Shanghai (X. Zhang & Kanbur, 2005). These examples highlight the historical and geographical link between the province of birth and the unequal educational chances in higher education.

A World Bank Chinese Ministry of Education joint report (Johnstone et al., 1998) confirmed that the differences in educational opportunities between rural and urban regions were 5.8 times national wide. (H. Li et al., (2015) indicated that, in 2003, youth from poor countries in China were between 7 and 11 times less likely to access standard colleges and elite universities (Project 211 universities) than urban youth. Moreover, more significant gaps exist for rural female students and students from ethnic minorities from impoverished counties (H. Li et al., 2015). The above statistics (1998 to 2003) show that the rural/urban gap in higher education admissions has expanded. Meanwhile, Zhang and Liu (2015) have pointed out that the most prestigious universities have the lowest percentage of students from rural areas (Y. L. Zhang & Liu, 2005). Research has highlighted that any reduction in inequality concerning access to higher education is either small or negligible. Suppose rural students cannot gain fair access to quality higher education and achieve similar levels of socioeconomic status to their more advantaged peers. In that case, there will be an impact on social inequality and, ultimately, social cohesion (H. Li et al., 2015).

In summary, these findings highlight the systematic inequalities prevalent in China's education system. In the advanced coastal region, education resources such as teachers, funding, models, and facilities far surpass those available in rural areas across all levels of education. This disparity emphasizes the urgent need for targeted efforts to bridge the gap and provide equal educational opportunities for students in both urban and rural settings.

H. Micro-system: Human-environment interaction (PRQ 3)

The micro-system includes the individual's immediate surroundings, such as the family, school, peer groups, neighborhood, and other immediate social contexts. These environments are crucial in shaping the individual's experiences, beliefs, values, and behaviors (Bronfenbrenner, 1989). The microsystem recognizes the significance of relationships within the immediate environment. The quality of interactions with parents, siblings, teachers, classmates, and friends within these settings can significantly impact the individual's development. Positive, supportive relationships can foster healthy development, while negative or dysfunctional relationships can have adverse effects. It highlights the influence of relationships, immediate surroundings, and unique experiences within these settings on an individual's development. The microsystem level emphasizes the bidirectional influence between the individual and their immediate environment, recognizing the cumulative impact of experiences within this level (Lynam et al., 2018).

In rural China, the context of education is primarily influenced by the relationship between the person and his immediate environment. The quality of an individual's interactions with parents, siblings, teachers, classmates, and friends in these settings can greatly affect an individual's educational development. Positive, supportive relationships can promote healthy personal development, whereas relationships in an underdeveloped or

dysfunctional education system can adversely affect personality development.

1) Individuals' Family and Home Environment in Rural China

The family plays a crucial role in the microsystem of rural education. The family's interactions, support, and values influence a child's educational experiences. Parental involvement, educational aspirations, and economic conditions can significantly impact a child's access to resources and educational opportunities.

According to the 2018 Annual Report by UNICEF, around 69 million children in rural areas, which accounts for approximately thirty percent, have been separated from one or both of their parents due to migration (UNICEF, 2018). Left-behind children remain in rural regions of the country while their parents leave to work in urban areas. In many cases, these children are cared for by their extended families, usually by grandparents or family friends, who remain in the rural region's childcare to accomplish their family obligations to many kin caregivers (Spence, 2004). Most rural kin caregivers are confident in providing primary living conditions and meeting children's basic needs, such as food, housing, clothing, and personal hygiene. However, most of them do not have confidence in education and interaction. Kin caregivers who live in rural areas need to balance their farm work and childcare, which leads to a lack of essential communication between the child and the kin caregiver (Wu, 2017), and less likely to invest in children's education as much as their parents.

2) Local Community Connections

Traditionally, the neighborhood of China's rural villages is consolidated, supportive, and attached (Arkush, 1981). Villagers live, work, and socialize in an enclosed environment, forming a naturally created community with a strong and close neighborhood (Liu et al., 2017). In such a neighborhood with dense and overlapping social ties, children can receive support and care from adults outside their own families. Likewise, they may also benefit from a broader range of public interaction (Xie et al., 2019). Some rural areas have care network sites named "Children's Family Education and Guidance Centers," which consist of towns, villages, and schools. Some rural villages have gradually established small libraries, parent cultural reading rooms, left-behind child center kindergartens; family activity rooms, and after-school activities (K. Lin et al., 2014; Z. Wang et al., 2017). Given that education in rural areas has lagged far behind urban education, these small community support centers can make up for this shortfall to a micro extent.

3) Healthy Issues

Education is crucial in promoting health literacy, disease prevention, and healthy behaviors within communities. Access to quality education equips individuals with the knowledge and skills to make informed health decisions and adopt healthier lifestyles. Conversely, poor health, including physical and mental health issues, can hinder access to education and impede academic performance for individuals of all ages.

Because of the external limitations (e.g., rough geographical conditions, disadvantaged transportation system, and deficient public services), rural regions in China have more dilemmas, compromises, and deprivations, severely threatening rural children's healthy development. According to a report (UNICEF, 2014), rural children are severely deprived of access to basic infrastructures (e.g., safe drinking water, sanitation facilities, good health care, and education), especially those from low-income families. It is estimated that over 75 percent of children from low-income facilities are suffering from malnutrition, anemia, eyesight issues, and parasitic diseases (Watkins, 2016). For example, research demonstrated that in 2009, the prevalence of stunting among 6 to 11 months of age infants in poor rural areas was 3.3 times the national average; in Yunnan province (Southwest China), children of the same age showed a stunting rate of 5.7 times higher than the national average; in both Yunnan province and Qinghai province (Northwest China), rate of anemia of the children 12 to 23 months of age was respectively 3.9 and 3.2 times higher than the national average (Mai, 2012). Likewise, in rural areas, 13 percent of fourth to sixth-grade children had poor vision (Glewwe et al., 2012). All these facts reflect that a significant number of children in rural China experience diverse rural settings that may impact their development and educational well-being.

4) Digital Division

The digital divide refers to the gap in access to and use of digital technologies between different groups or regions. Rural China and urban China experience a significant digital divide in education, which impacts educational opportunities and outcomes (Fong, 2009). For example, urban areas in China generally have better access to digital infrastructure, including high-speed internet connectivity and technological resources such as computers and tablets. In contrast, rural areas often lack reliable internet access and have limited availability of digital devices, creating barriers to online learning and digital educational resources. Moreover, urban schools in China tend to have more comprehensive digital educational resources, including e-learning platforms, educational software, and online libraries. These resources enhance the learning experience and give students access to various educational materials. In rural areas, the lack of digital resources restricts students' ability to access and utilize these tools, limiting their educational opportunities (X. Wang et al., 2023).

Research indicates that urban schools often have better access to qualified teachers trained in digital pedagogy and can effectively integrate technology into their teaching practices. In rural areas, there may be a shortage of qualified teachers with digital literacy skills, impacting the

quality of instruction and limiting students' exposure to innovative teaching methods facilitated by digital technologies (H. Wang et al., 2022). The digital divide in education exacerbates educational inequalities between rural and urban areas in China. With their greater access to digital resources, students in urban schools tend to have more opportunities for personalized learning, interactive educational experiences, and exposure to emerging technologies. Conversely, students in rural school's face disadvantages that can hinder their educational development and prospects (Guo & Chen, 2011).

Individuals, infrastructure, teacher quality, access to resources, community engagement, and cultural sensitivity create the micro-system in rural China's education. Recognizing and addressing the specific challenges rural residents and communities face within their micro-systems is crucial for the public to understand why rural education is disadvantaged and left behind. It is essential to promote equitable educational opportunities in rural China."

II. Conclusion

The Ecology System Theory pivots this analysis into a framework to explain how sociocultural elements and natural factors can influence rural education's evolution. Given that the society, culture, and geographic environment immersed within the objective may influence its developmental process direction, the presented factors from each level of the eco-system can be seen as potential agents that directly and indirectly shaped the development of China's "two-track system" and the disadvantage of rural education. Under this frame, this study presents the divide between China's urban and rural areas as a stark existence (e.g., economy and education), which has led to a series of complex inequalities for rural education that may further catalyze a pernicious future crisis for the country. These disparities between rural and urban areas increased rural children's likelihood of being trapped in developmental issues. These disparities also reduced their opportunities to obtain the same educational resources as their urban counterparts, thus forming chronicle and systematical inequality between China's rural education and urban education.

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