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The Rural and Urban China Education Disparities

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Abstract: In the last decades, education in China has significantly developed and the majority of Chinese young generations are literate. While the exponential growth in urban adult literacy is a testament to the success of the compulsory education system, it is crucial to acknowledge that rural education has been left behind and marginalized in China. This research delves into the urgent issue of rural education inequality in China. The paper thoroughly investigates the current education problems in rural regions and proposes a solution by adjusting faculty distribution and implementing a national central platform for artificial intelligence classrooms (AIC). These measures aim to address the pressing concern, optimize funding usage, and mitigate inequality in education resources to prevent the urban-rural gap from widening. It is important to note that while implementing these proposals is yet to be completed, this paper provides a theoretical examination of the existing issues. Based on the findings, the study proposes a theoretical AIC model for making a social change of education.

Keywords: Education, China, disparity, evaluation, implementation.

1. Introduction

In the past few decades, the level of education in China has been significantly increased and most Chinese young generations become literate [1]. However, rural education has been left behind and marginalized in China. This paper discusses the education disparities in China, analyzes the existing issues, and proposes a platform-based change plan with great potential. This research narrows down its scope to education's core issues. External factors are excluded, including classroom infrastructure or geographical location, focusing on aspects such as educator's qualification, education resources, and so forth.

In the first stage, the study thoroughly explores the problems, searches for causes, and defines desired outcomes. The second stage involves developing a practical and tech-driven AIC change strategy that, while it may only benefit some aspects, has the potential to improve the situation significantly. The last stage will analyze the possible challenges and optimums constructed for mitigating potential problems, such as financial guarantee concern and local adaptability, loss of investors or participants, etc. This comprehensive approach instills hope for a brighter future for rural education in China. It will further evaluate our strategies and overview our approaches as if an actual implementation is executed.

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2. Problems Identification

2.1. The Present Situation

The claim that rural students perform worse than urban students is not a prejudice nor a societal bias; it is reality. Compulsory education in China involves primary and low-secondary education for six to three years. This policy was enacted to reduce the financial pressure on families. Although education is ensured at a basic level, nearly sixty percent of rural students drop out of high-secondary education that is no longer free [2].

Even though college (tertiary school) enrollment rate has demonstrated an exponential growth between 1990 to 2023 for 3.4 percent and 60.2 percent [3]. Students in rural areas before 2010 who attended middle school merely pursued high school and kept receiving their compulsory education. Research conducted between 2010 and 2012 compared urban-rural academic graduations.

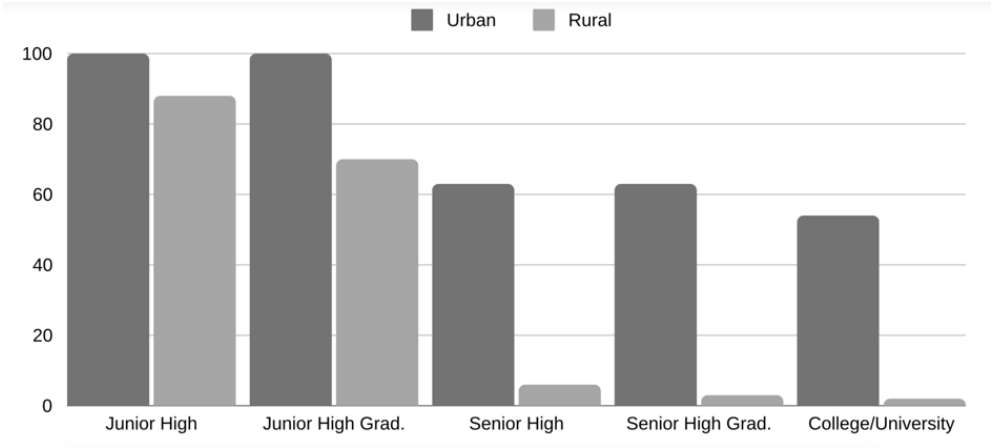

Figure 1: Rural and urban enrollment and graduation rates.

Based on the Figure 1, the rural enrollment and graduation rates were relatively high for juniors high. The high school period (grade seven to nine) is compared to a hundred percent in urban regions. As senior high school begins, however, compulsory education no longer funds students in education. A sharp drop occurred because of the lack of financial support. The ratio between junior high graduation rate and senior high enrollment rate in rural regions was a shocking 35:3 difference. Rural students enrolled in university were less than two percent of the total population. On average, only one student in average would be going to college within a whole junior high class.

2.2. The Post COVID-19 Period - Existing Problems

When the deadly virus COVID-19 entered human history, its high lethality and infection rate drastically cast horror on civilian lives throughout the globe. The online classes were established in a hurry to reduce infection in teenagers. This action, however, needed to be well-prepared before it was stated.

Numerous platforms crashed in schools; every school has plenty of unaligned scattered systems for teaching with no standardized courses. Also, there is no synchronization mechanism for student performance, such as assignment handouts, checking, and scoring among different systems. The decoupling between online resources and offline school leads to inadequate supervision. The above factors contributed to education pressures and ultimately made the system unconsolidated. Furthermore, the chaotic situation eventually made the financially stressed institution– typically in rural regions –pressurized with poor academic performances.

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2.3. Faculty Polarization

Insufficient education is a determining factor in rural students' overall low academic performance. As cities become increasingly advanced, teachers are lured to work in urban schools for high salaries and superior treatment. This inevitably destroyed the national faculty distribution balance, creating a rural education crisis.

In 2014, 87.3 percent and 96.5 percent of teachers held junior college degrees for rural and urban areas [4]. In the 2000s, however, nearly 40 percent of rural teachers taught subjects that must align with their qualified fields of study. When the central government discovered that rural areas had insufficient teachers, many teachers were recruited, typically those who lacked proper teaching qualifications to fill in the original blanks. Quantity was ensured, but quality was not guaranteed. A trend was observed – teachers tend to teach students with high academic performances and status in cities – to further impact teaching quality inequality in rural-urban education studies. For rural areas to gain a basic amount of faculty, the qualification line is significantly lower than those in urban areas. By doing so, rural regions would be less likely to suffer from the financial crisis by offering low salaries to low-degreed teachers. These teachers are paid as low as 2500 Yuan (approximately 360 US dollars) per month [4].

Moreover, social-emotional skills should be gained because countryside children have a high left-behind percentile, meaning their parents go out for work in urban regions and leave them in rural regions, children are usually cared for by grandparents or relatives [5]. A total of more than 6.1 million children in China are left behind, with more than a third of rural children. These children face serious mental health problems due to the lack of expression opportunities. Teachers must be taught how to communicate with these students effectively and make them happy. In addition, rural teachers must take care of students' off-school life physically and mentally, such as settling down family disputes and psychology counseling, in addition to heavily routine work compared with their urban counterparts. This extra burden usually becomes the last straw for young, desperate rural teachers who leave their jobs without hesitation. The urban regions became centers for the elites, while the rural areas had merely no high-performance graduates.

This Polarization trend of faculty distribution became an aftermath of the enormous income gap between rural and urban areas. How to construct a high-efficiency training system to cultivate young graduates to quickly adapt to teaching positions and how to reduce significantly their routine work should be serious concerns.

2.4. Hardware Resources

Hardware resources are also a significant factor that contributes to the education gap [6]. Comparatively expensive computer, for instance, grant students a great range of access to education resources from the world—about forty percent of urban students' own computers, comparing to seventy-point-three percent in rural regions.

Once a powerful AIC platform is established, we can significantly truncate the laptop specification and reduce the price of specified terminals to 500 yuan each [7]. These affordable education laptops should be guaranteed for students on the mandatory list. The government should financially support it as a top priority rather than a luxury concrete building. About 160 million students attend compulsory education (primary and lower secondary school), and two-thirds live in rural regions [8]. Suppose this terminal costs 500 Yuan and can be granted. In that case, the total spending on rural students is approximately 50 billion Yuan. In comparison, each Chinese family (usually 3) spends approximately 8464 Yuan per year on education [9]. By calculating the whole budget, more than 4000 billion Yuan is spent. Thus, making computers mandatory is a totally acceptable approach.

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2.5. Stakeholder Funding Efficiency

The Chinese government plays a vital role in funding, indirectly linking it to students' performances. The national agencies set sequenced steps for every policy and make the society function in a specific order. The author acknowledges that the Chinese government has spent an enormous amount of time and money on education. However, rural areas still experience inadequate educational resources. The government has great potential to enhance rural education by employing new technology to increase the return on investment. Review and adjust the policy in time by periodically monitoring the AI-based data. And draw up reasonable rewards and punishment plans combined with strict teacher promotion procedures to overcome the violability problem of consistent faculty loss in rural areas. In short, the governmental support is crucial.

The current situation in China is a severely disproportionate distribution of education resources and faculty. Although the Chinese government invests a tremendous amount of funds into either compulsory or private education programs, students' accessibility to formal education still varies greatly between different regions, typically between rural and urban areas. Raising education accessibility to students will mitigate the huge accessibility gap and increase education accessibility.

3. Approaches

3.1. Tech-driven Changes: Online Education Platform

Although COVID-19 led to severe drops in education quality, online classrooms have also demonstrated their ability to break the spatial barrier and offer education across thousands of miles. "Education is the key to opportunity in our society, and the equality of educational opportunity must be the birthright of every citizen", claimed Lyndon B. Johnson [10]. Before constructing our online platforms, this part first discusses strategies. The characteristic of the internet – quick idea spreading – to encourage teachers or volunteers to make joint efforts quickly and conveniently. Though some may argue that internet connection is an influential factor, China has a policy enacted to ensure that network connections up to 5G function correctly. It is a fact that rural areas have better internet connections compared to urban regions.

Inspired by the "Bemyeyes," a platform designed to assist blind or low-vision patients in their daily lives, our platform should bond standardized and excellent curricula with rural networks. For instance, star teachers in urban model schools may record their classes while teaching and later upload their videos to the education platform. The rural counterpart would receive and display the records. In this way, good education resources are no longer limited to a few model schools but are shared quickly nationwide, especially in rural areas lacking good education resources.

Besides, knowledge, responsibility, and emotional support are other main factors that separate present teachers from traditional teachers due to the powerful artificial intelligence capable of storing knowledge millions of times more than humans. This strategy fits the best nowadays. The decrease in birthrate and the fleeing-out population in rural areas force schools in villages to merge or shut down. Most village students must travel tens of miles to attend school in nearby towns. Transportation, undoubtedly, is an obstacle for students to attend school. Adding more schools, however, is unreasonable. The decrease in the rural student population makes it hard for schools to operate with only several students. The online platform, on the other hand, overcame the problems we encountered above. Using the AIC, any person with an electric device could access the platform. Knowledge checks can be made to analyze a student's performance in various fields. The system may decrease its frequency of teaching the mastered subjects and spend more time instructing those fields that a student is not familiar with. The ultimate level of education is achieving personalized-based image

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instruction. This program, in this case, has significant advantages over the traditional school teaching strategy that teaches accords with inflexible textbooks.

Also, a class can be organized flexibly by having module-scheduled sections. Suppose a scenario: Video recordings start first, questioning sections are followed, then a quiz for knowledge check is given, and last, a report is generated. Teachers are only required during the questioning sections, but they should engage with students' conversations as much as possible. Grading assignments such as multiple choice or quantitative answering can be done automatically by the system. Teachers, such as writing or drawing, should grade assignments that involve criteria.

The most sparkling feature of this system is called a family classroom. Governmental support and school effort are crucial, but all efforts will be useless when students or families fail to implement them. AIC not only makes idea spreading easy but also creates online intimacy communications. Teachers, students, and families can get interactively involved in this system. This approach is especially beneficial to left-behind children: their parents know their children's progress and well-being in real time and have the parental privilege to avoid child panel misuse.

3.2. High-Efficient Training System

Education can only withstand itself with qualified teachers. An increase in quantity is not equivalent to a rise in quality. Practical teacher training will serve as a massive stride toward rural education. The increase in rural faculty members, while making no enhancements in their academic degrees and teaching skills, is no different from the present. Providing teachers with efficient and practical training courses is going to change this. These courses may advise new teachers to enrich their teaching skills and build their knowledge after finishing their degrees. Often, teachers forget what they have learned and only teach their students what the teaching journals tell. The training courses offer teachers to develop professional skills before they implement them. Qualification issue was proved and regarded as an essential factor contributing to low-quality rural education. Providing teachers with proper training, specifically on education methods and knowledge checks, will strengthen their teaching quality.

Professional training can be offered on the platforms at a low cost since your recruiters are not required to travel to specific training centers. Rural students will get access to free classes taught by a volume of curricula. Teachers are only required when students face problems with their learning progress or minor issues. Assignments, especially those that can be scored depending on right or wrong, can be done automatically using the platform. Students from extensive rural areas can benefit from this strategy, aiming for efficiency and publicity.

The author does not stress a participant's honor or achievement before he volunteered to join our platforms or a teacher qualification certificate. Fresh graduates to senior or retired professors are all accepted. Their goal is to maintain the classroom atmosphere and ensure that students are on track. The platform benefits rural children's education and teachers by creating a sense of accomplishment.

It can also reduce the recruiting threshold of participants with this training system. Video recordings can teach courses with a questioning section. Freshmen or volunteers can be trained effectively on the platform by watching premade instructional courses. The participants are not required to match their major with their teaching field. After training, questionnaires are filled out to get qualifications. This highly efficient training system will consistently provide many experienced and qualified faculties to ensure the security of personnel in the countryside.

3.3. Faculty Redistribution Mechanism

As mentioned previously, polarization of faculty distribution occurred. However, redistributing them by analyzing the current situation will undoubtedly make a difference. From our observations,

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teachers who rushed into cities were driven by the will for high salaries. To slow down polarization, we should reverse things. Raising the rural teaching salary is the best strategy to supplement the insufficiency. This method utilizes human nature – people tend to approach things that bring them higher profit than others – and is predicted to have the most potential for solving this problem.

Apart from salary attraction, working in rural areas as a precondition for faculty up-levels is also a great strategy. In the field of medication, if a physician wants to upgrade his position, he must work in remote regions for a couple of years where no proper facility appears. Therefore, highly ranked physicians are resilient people; patients can also be cured scientifically after physicians visit their districts. This strategy can be adopted in education systems: working in rural areas for a particular time as a precondition for further promotion. For example, junior teachers work 2-3 years every five years and senior teachers work 1-2 years every 6 years.

3.4. Necessary Behaviors and Suggestions

Teachers should be involved in mental counseling and analyzing students' performances. Students may get personalized reports generated by algorithms that tell them their academic strengths and weaknesses. The platform will speed up information transfers and make education highly available regardless of geographic position. Teachers may also communicate on the platform and share their education methods.

Faculty and education resource distribution refers to know-how and information exchange. Teachers are involved in this by transferring from urban to rural areas. Analysis will be carried out to calculate a teacher distribution ratio in rural and urban areas that will yield the best result.

As faculty and student evaluators, they will be targeting examining teachers' performances. The evaluations can take place verbally or in written form. The goal of the assessment is to ensure the faculty's knowledge storage and make sure that their teaching progress is on track. Student performances should also be recorded to determine whether our interventions are effective.

Last, the investment collection is an essential step. The funds donated to our organization can only be used in various programs after some time. Instead, the collectors must calculate the approximate money required for specific projects and split the funds cautiously. Especially at the start of our programs, when the funds we receive are insufficient to support our planned projects, the collectors must prioritize the funding ratios to meet short-term success.

4. Potential Problems

Not all experiment succeeds. The previous parts have identified weaknesses in various aspects that could potentially fail interventions. Some weaknesses can be mitigated, while others are difficult to control. The best option to deal with the out-of-control weaknesses is to provide alternative plans.

In terms of funds, controlling fund fluctuation is hardly possible. Since a small organization is established without a firm foundation, investments may alter dramatically over a short period. It may receive five thousand dollars at one time but only five hundred at other time. Fund expenses should be regulated – a quantitative limit – to prevent organizations from running out of money. The funds can be split to prioritize tasks to ensure the essential job functions.

Additionally, stakeholders may lose interest when alternative, more profitable ventures become attractive. Essentially, entrepreneurs might be enticed by higher returns. While investors' passion can generate positive momentum, emotional investment alone may prove insufficient to sustain long-term success in an everchanging society. The organization could either survive or face potential collapse if confronted with financial challenges. To mitigate the allure of other business opportunities, it is essential to maintain our unique passion and specialized expertise. Even if some partners depart,

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substantial fluctuations are unlikely to occur. These distinguishing features will contribute to long-term organizational stability.

5. Conclusion

This study shows that education inequality has been a massive issue in China over the past decades. Although the Chinese government sought to remedy the disparities, the cause is not simple but rather complex, entangled with various social factors, such as social status, financial crisis, gender inequality, etc. Therefore, this study proposes a theoretical AIC model for making a social change involving governmental support, policymakers' intervention, educators' efforts, and students' and their family's implementation.

Individuals within a society should be able to receive equal access to education as a fundamental human right. It should not be neglected, but the significance of education equality should always be stressed. As mentioned before, "education is the key to opportunity in our society". Only by doing so can individuals enjoy equal rights and integrate better into societies. Well-educated individuals, in turn, would contribute to social and economic development globally.

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