

Educating China's Rural Children in the 21st Century

By EMILY HANNUM & ALBERT PARK

Two decades of reform have transformed the social and economic context of schooling in China. The economic returns to education have increased, while at the same time rising incomes have made possible greater investments in education. Greater governmental decentralization, however, has widened urban-rural and interregional disparities in schooling access and quality. Thus, the challenges are particularly great for China's rural educational system.

The system has made enormous strides since 1949, when the government faced the challenge of educating a population that was 80 percent illiterate and in which less than 40 percent—some estimate less than 20 percent—of school-aged children were enrolled in school. The socialist record in increasing the numbers of rural schools and raising enrollment and literacy rates was truly remarkable and stands as one of the great accomplishments of Chinese communism. By 1980, adult literacy had reached 70 percent, and nearly all children received a primary education.

Dramatic reductions in poverty increased available resources for educational investment and perhaps more importantly allowed millions of children to consume nutritionally adequate diets essential for normal cognitive development. Yet, new challenges have emerged.

In the popular movie *Not One Less*, the famous Chinese director Zhang Yimou dramatizes the financial plight of schools and families in poor, rural areas. A young and inexperienced substitute teacher works in a dilapidated one-room rural schoolhouse. Using chalk that must be rationed carefully to last through the year, she writes lessons on the board each day for the children to copy into their notebooks. Heeding the words of the absent teacher, the substitutes main goal is to prevent children from dropping out of school. The story centers around the teacher's journey to bring back a boy who has left school to earn money in the city to help pay the medical expenses of his sick mother.

The goal of this article is to describe the system of rural education in China and critically assess current policy challenges. Our observations resonate with the rural setting described in *Not One Less*—lack of funds, high dropout rates among the poor, and teachers with little training and support. First, we examine the financing of

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public education in rural areas, which lies at the heart of growing disparities in the quality of education. Second, we discuss the challenge of providing a public education for all, especially for the poor, for young girls, and for minorities. Third, we discuss priorities for raising the overall quality of rural education.

At various points, we refer to findings from the Gansu Study of Children and Families, or the Gansu project, a major field research project in the year 2000 to investigate the key issues affecting rural educational outcomes in China, especially those in poor areas. The project was undertaken by an interdisciplinary team of US and Chinese researchers and featured detailed interviews and testing of 2,000 9-to-12 year-old children in rural areas of Gansu, an interior province in Northwest China. We also interviewed each child's mother, father, teacher, school principal, and village leader. These interviews produced a rich set of perspectives on the community, family, and school contexts in which children learn. We plan to follow these children as they grow up to study how childhood experiences, education, and health affect future life outcomes.

FINANCING PUBLIC EDUCATION

Many of the challenges of providing universal, high-quality public education to rural children are related to difficult policy choices associated with reform of the gov-

ernment's fiscal system. Market competition has eroded the profitability of China's state-owned enterprises, and the government has struggled to establish an effective taxation system to replace the lost revenues previously provided by these enterprises. China's rapid growth has created a large demand for new public infrastructure at the same time that millions of current and retired state-owned enterprise and government workers, including teachers, continue to require publicly provided wages and benefits. To provide stronger incentives for local government leaders to generate more revenue and to shed their own expenditure responsibilities that cannot be met, governments at all administrative levels have passed the buck downward, decentralizing government expenditure responsibilities as well as claims on government revenue.

This system of "eating from separate pots" (*feng zou chi fang*) has reduced the amount of resource transfers from richer to poorer regions, increasing inequities in public spending. The highest level of provincial educational expenditures per primary school student, in Shanghai, is now ten times greater than the lowest, compared to only five times greater a decade ago. Analyzing spending data from primary schools in Gansu, we found that school spending in rich and poor villages within the same county did not differ significantly, but that average income levels were highly correlated with spending and other indicators of school quality across counties within the province. Using national data, we found that interprovincial inequality in school spending associated with income differences was even greater. Thus, as one moves to higher levels of regional aggregation, income disparities in school quality increase.

In poor areas, the lack of government resources has put great strain on the ability of local communities to finance high-quality public education. In such areas, many teachers do not even receive wage payments on time. Our Gansu survey found that 90 percent of teachers were owed wages, typically three months worth. Late wage payments hurt morale and force some teachers to spend time earning incomes from other sources.

With an immediate focus on meeting wage obligations, county governments in poor regions often cannot afford investments in new buildings, desks, equipment, or daily supplies. In general, the government budget finances only teachers' wages. Other costs must be paid for from local resources, either through special earmarked funds collected from households, contributions from village collectives, school-generated revenues, or fees charged directly to students. Since the tragic explosion last December in a Jiangxi primary school that was allegedly producing fireworks, it has become well known that some (but not most) schools in China engage directly in commercial activities to earn funds to support their operations, and sometimes children spend time contributing to such activities. In some cases, collectively owned enterprises or rich local businessmen may make large contributions to cover such costs.



Children playing a game in a Gansu school courtyard.

Reliance on nongovernmental resources, however, is likely to exacerbate, not ameliorate, spending disparities. The poorest areas are least likely to have the capacity to raise local funds, and so are most likely to pass on costs directly to students or simply not spend money. This is true even for school-generated revenues, because poor areas simply lack viable commercial activities. Our Gansu research has found that inequality in primary school spending on "daily" costs such as classroom supplies and heating is much greater than for wage expenditures. On average, seventy percent of such expenditures are financed from student fees and twenty percent from school-generated revenue (mostly in richer villages). These realities of school financing help explain growing disparities in public educational expenditures. The recent, rapid emergence of elite private schools, especially in cities, makes school quality disparities even greater.

EDUCATING THE POOR

In poor areas, children tend to start school later and drop out earlier. The lower educational attainment of children in poor families has multiple explanations. The most obvious is that poor families lack the financial ability to pay required school fees. The poor have little cash income and savings, often lack access to formal credit, and have limited social networks from which they can borrow money. In Gansu, the average family educational expenditures for children in primary school was RMB 270 per year, or about \$34, accounting for four percent of total household expenditures. Lower secondary school fees are more than twice as high as primary school fees. It is easy to see why many families may have difficulty mobilizing enough cash to pay school fees.

Another likely explanation for lower enrollments in



School children in rural Gansu doing exercises.

poor areas is that the returns to schooling are lower for the poor, making education a less attractive investment. One reason for lower returns is poorer access to schools, which increases the costs of school attendance. Children in remote, mountainous villages where most of China's poor reside often must walk farther each day to school. A second reason is lower school quality. If children cannot pass high school or college entrance examinations, they are very likely to end up being farmers like their parents, so a reduced likelihood of academic success reduces the expected payoffs from continued schooling. A third reason is that educated laborers in remote areas may have less attractive labor market opportunities because of poor information, high migration costs, or other barriers.

Another connection between low enrollment and poverty is the typically low education levels of parents in poor areas. In China and elsewhere, parental education positively predicts schooling attainment of children, even after controlling for differences in income and wealth. Various explanations have been proposed for this finding. Educated parents may value education more, have children who are achieving more in school, or be able to provide more effective support for education.

Poverty also affects the ability of children to learn when they do attend school. Poor families may not be able to afford health care, nutritious food, adequate clothing, school supplies, or desks and good lighting at home, all of which support better learning. Health experts in Gansu report that most children suffer from Vitamin A deficiency, and many consume low levels of iron and zinc, nutrients known to affect cognitive functioning. Our Gansu study found that about 30 percent of children report having

vision problems but that only about 10 percent wear glasses. Brown & Park found evidence that children in families with less wealth had significantly lower exam scores.

Finally, our Gansu research found that children in more socioeconomically disadvantaged environments tend to have a lower level of engagement with schooling, measured in terms of their own reported educational aspirations, academic confidence, industriousness, and degree of alienation. More encouragingly from a reform standpoint, we found that greater parent-child interactions and the presence of books in the home promote engagement even after accounting for socioeconomic circumstances.

EDUCATING GIRLS

In China, poverty and the rising costs of schooling disproportionately affect rural girls, because of cultural traditions and norms that place them in a vulnerable position in the family. Traditionally, sons are expected to co-reside with parents after marriage, and thus to provide long-term security for parents, while daughters are expected to marry out of the family. For very poor parents, this tradition creates a survival-based incentive to avoid both the direct costs and opportunity costs associated with educating daughters, and instead to direct daughters to contribute to the household economy until departure to married life.

Although researchers have suggested likely explanations for girls' vulnerable position, few studies have directly asked questions about attitudes that place girls at risk. The Gansu study found that most mothers voice egalitarian attitudes toward male and female abilities. Most also

report, however, that families should rely on sons for old-age support and that they expect to receive financial support from their own sons. Mothers who expect support from daughters have higher aspirations for girls than mothers who expect support from sons. Further, half of mothers expect education to have a larger earnings effect for sons than daughters, and adherents to this perspective have lower aspirations for girls.

Analyzing national rural survey data from the late 1980s and early 1990s, Hannum found that girls' enrollment in rural China was more sensitive to household poverty than boys', and that girls were more likely to drop out because of economic constraints or opportunity costs, a finding consistent with studies in other developing countries. Brown & Park found evidence of a selection story in which girls performing poorly in school are more likely to drop out in primary school, while nearly all boys advance to at least middle school.

Fortunately, gender disparities in basic education in China have exhibited a long-term narrowing trend despite a temporary stalling in the late 1970s and early 1980s. The collective evidence about gender disparities suggests that for much of rural China, norms that might be barriers to basic education for girls appear to yield to economic improvements. These results suggest that addressing poverty issues will go a long way toward addressing gender inequality, at least with respect to access to basic education.

EDUCATING MINORITY CHILDREN

China's minorities are a diverse group. The fifty-five officially recognized minority groups live mainly in the poorer western regions of the country and account for 9 percent of the population, a percentage that would increase to 28.5 percent by 2048 at current population growth rates. National evidence indicates that the educational composition of China's minority population is improving steadily. At some levels and in some regions, however, improvements for minorities have not been as rapid as for

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the Han Chinese population.

One of the reasons for this difference is that ethnic minorities tend to have lower socioeconomic status. Ethnic groups displaying the greatest gender disparity in school enrollment are those characterized by high rates of poverty, and minority girls are more likely than any other group to report economic causes for school withdrawals.

For ethnic minorities, cultural factors also play a role in explaining lower educational attainment and gender gaps. Consistent with theories of minority schooling in the United States, ethnographic work in China suggests that many of the educational challenges facing minorities are rooted in perceptions of ethnic minorities that the school system is dismissive of or incompatible with aspects of their own culture, or that members of their own community are unable to obtain tangible economic benefits from educational achievements.

Messages about the value of minority culture—negative and positive—transmitted through schools can have powerful effects on the academic engagement and achievement of minority students. Minority children in remote rural settings often find a vast distance between their experiences of daily life and the contents of school learning.

Strategies have emerged to address this concern, includ-

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Another curricular goal is to allow local educators to design curriculum that is more appropriate for local environments, a move away from the rigid, nationwide standard curriculum of the past.

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ing expanded minority teacher training programs, the provision of textbooks in minority languages, native language teaching through secondary school for some minorities, boarding schools in areas serving remote communities, special classes for girls for schools serving Muslim communities, and special schooling arrangements for children of herders. There are preparatory courses and preferential policies for higher education for minorities. One positive aspect of decentralization for minorities has been increased decision-making authority of principals and local administrations and community groups, despite often less favorable economic circumstances.

Given general problems of teacher shortages in poor rural settings, it is difficult to find teachers with appropriate language skills and other qualifications. In addition, there is some controversy over how much bilingual education serves the long-term interests of minority students, who eventually need to master the national language for social and economic advancement. Professor Wang Jiayi, vice president of Northwest Normal University, has pointed out the difficulty of implementing bilingual education in technical subjects for which elements of terminology may not be available in minority languages.

IMPROVING RURAL SCHOOLS

Rising educational enrollment across rural China attests to the success of earlier policy campaigns that focused on getting children into school. On the foundation of this accomplishment, the next critical priority for the educational system is to improve the quality of education. The Chinese government has recognized the importance of redirecting the focus of educational policy to educational quality. The 1995 Education Law stipulated that all citizens have an equal opportunity for a quality education. In 1999, following the Third National Working Conference on Education, the State Council issued "Decisions on Deepening the Educational Reform and Improving

Quality-Oriented Education" and later approved "The Action Plan to Revitalize Education Toward the 21st Century," prepared by the Ministry of Education. These documents strongly emphasize the importance of increasing the quality of schooling experiences, especially the need to promote educational quality in poor and minority regions.

INFRASTRUCTURE AND SCHOOL FINANCE

Improvements in quality require resources. On an optimistic note, the improved ability of the central government to raise revenue following the tax reform of 1994 has improved its ability to redistribute resources. Education, however, must compete with many other demands on public funds.

One strategy employed by the government to address the money problem has been to earmark funds through the official budgetary system. The Ministry of Education recently announced plans to invest more than RMB 30 billion in the expansion of access and improvement of facilities for basic education from 2001 to 2005. To address inequities, the government has targeted a definite amount of budgetary funds to poor and minority regions. Educational funds for underdeveloped areas increased steadily from a total of RMB 17 million per year from 1976 to 1980 to more than RMB 100 million per year from 1990 to 1995. While significant, these funds are far from sufficient to resolve the financing shortage.

Another response has been to mobilize other sources of finance to build new schools in poor areas or to provide scholarships to poor students. China has partnered rich provinces with poor provinces, encouraging government departments in rich areas to assist less-developed regions. For example, education departments in the more-developed areas donate money and teaching materials and share teaching staff through rotations with the interior. The China Youth Development Foundation, a quasi-public nongovernmental organization, through its Project Hope, has provided more than 1.8 million school dropouts with scholarships to return to school and has sponsored the construction of more than 5,000 Hope Primary Schools. International NGOs (e.g., Save the Children), domestic NGOs (e.g., Phelex Foundation), and international organizations (e.g., World Bank, UNICEF, and Britain's Department for International Development) have contributed large amounts of resources for improving the quality of schools in poor areas.

WHAT TO TEACH?

In the educational reform agenda, an important objective is to modernize instructional methods and content to move beyond exam performance as the sole quality crite-

rion and focus more on other dimensions of learning. As in other Asian countries, Chinese educators are raising concerns that Chinese students have too much homework, that students are asked to memorize too much rather than learn problem-solving skills, and that too much emphasis is placed on exam outcomes.

To make the curriculum more relevant for developing skills perceived to be essential for the global knowledge economy, plans are under way to adopt a newly designed curriculum nationally beginning in fall 2002, following pilots in 36 experimental areas that began the fall 2001. The new curriculum has emerged from international comparisons of curriculum and domestic surveys. Another curricular goal is to allow local educators to design curriculum that is more appropriate for local environments, a move away from the rigid, nationwide standard curriculum of the past. It remains to be seen whether implementation of curriculum reform plans will be effective, because their success depends greatly on the initiatives of local educators.

TEACHER TRAINING

An essential component of improving educational quality is the creation of a highly trained workforce of teachers. Our discussion of this issue draws heavily from recent work by Lynn Paine of Michigan State University. China's teacher qualification standards require that primary-school teachers should finish secondary-school-level teacher training and secondary-school teachers should complete three years of college-level training. By 1998, 95 percent of elementary and 83 percent of lower secondary teachers met these standards, with the rates much lower in poor and minority areas.

In rural areas, China's famous teacher farmers (*minban laoshi*) have served an important role in expanding educational access to all. *Minban* teachers, however, often have received little formal teacher training. China has been trying to "regularize" these teachers with in-service training certification programs. For example, in Gansu, all *minban* teachers have been converted either to full-time teachers or to substitute or part-time teachers. Currently, the ratio of *minban* teachers to full-time teachers in China is less than one to five. Many teachers have gained higher credentials through correspondence courses, but it remains unclear how the quality of such training compares to preservice training.

Another challenge facing the national teacher training task is demographic. In China, the number of primary-school students is falling while the number of secondary-school students is increasing rapidly, because of both higher enrollment rates and larger population cohorts. This situation creates an even greater need to produce more college-trained teachers. Most Chinese teachers are relatively young, with sixty percent of elementary teachers and sev-

enty percent of secondary teachers less than 40 years of age. The imbalanced age structure makes professional development even more challenging, because there are fewer experienced teachers to guide the younger teachers.

Adding to the problem, rural teachers are poorly paid and often face a heavy workload. In our surveys in Gansu, we found that average full-time teacher wages were only RMB 590, or about \$75 per month. Furthermore, nearly half of all teachers reported spending some time each week working in agriculture. Many younger teachers are unwilling to work in very remote areas far from urban townships, and they use personal connections to obtain appointments in better locations. In many poor communities, some qualified teachers have left to work as teachers or in other occupations in richer areas. In the Gansu data, more than one fourth of the 10 percent of teachers who stop teaching each year for reasons other than retirement are individuals who have left to teach in other regions.

PRINCIPALS AND SCHOOL GOVERNANCE

An equally important human resource challenge in rural schools that draws relatively little attention is school leadership. Principals face many challenges, especially in schools located in remote areas, but have minimal resources at their disposal. Such principals operate in relative isolation from their peers or from institutions that could help them improve school management by providing professional support or development opportunities.

As we have learned from school reforms in the United States, how schools are managed and how much they involve stakeholders, including teachers, parents, and community leaders, can have a large effect on school success. Little guidance, however, is provided for such dimensions of leadership in China, leading to very mixed performance. For example, in our Gansu schools, 15 percent of primary-school principals reported having no parent association that meets regularly. Identifying strategies for providing more support to isolated rural principals is an essential challenge for rural education.

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Toward Better Education in China

INFORMATION TECHNOLOGY

Technological developments raise the possibility of new strategies for addressing priority areas for rural schools related to both curriculum and labor-force issues. Some very exciting initiatives are emerging with the advent of wireless technology. The Chinese government is moving aggressively to capitalize on the potential of information technology for educational development in the interior and for poverty alleviation more generally.

The importance of distance education was recognized in a circular of the State Council issued in October 2000, outlining policies associated with the broad-based initiative to develop China's interior—the Develop the West campaign. The Ministry of Education has recently committed investments of \$43 million in developing distance learning to improve educational opportunities in economically disadvantaged western regions. These ambitious endeavors build on a long-established and impressive tradition of distance education through radio and television. Plans include connecting primary and middle schools in cities and towns across the country to a distance learning network in the next five years.

In addition to rapid expansion of Internet access to schools in better-off regions, experiments targeted specifically toward rural and remote communities and schools are under way. The October 2000 State Council circular advocated a project called “Connecting Every Village” that would make radio and television broadcasting available to rural communities. Ningxia University recently opened a distance-learning center with the mandate of educational development and poverty alleviation. Similarly, Northwest Normal University in Gansu is involved in a variety of pilot projects that use distance learning to serve teachers in remote and minority schools.

One project that we are undertaking with Professor Wang Jiayi of Northwest Normal University is the piloting of a virtual community of principals and teachers in rural schools in Gansu. The pilot is designed to improve school leadership by providing access through the Internet to professional and social connections in the outside world, a network of peers in other rural schools, expert mentors at Northwest Normal University, and Web-based planning and curricular materials. To be established in 2002-2003, the consequences of the net-

work for school governance and functioning and for the lives of affected principals, teachers, and students will be investigated through fieldwork, surveys, and online data capture in randomly chosen treatment and control schools. Like other information-technology initiatives in China, the project seeks to tap the potential of information technology to partially offset the problem of isolation, one of the most intractable root causes of the disadvantages of China's poorest schools.

RURAL EDUCATION IN THE 21ST CENTURY

Clearly, the challenges to providing a quality education to rural children are numerous. Many children in rural

China continue to live in extremely harsh environments, and many of the disadvantages associated with this reality are simply beyond the scope of the educational system to address. Within the school system, the economic and human resources required to meet the basic learning needs of these children are tremendous. The gap between resource-poor schools in the interior and schools serving the wealthy cities of the east is vast and growing; this trend has dramatically divergent implications for the long-term economic prospects of China's children.

The Chinese leadership appears committed to reducing glaring inequities as seen in the promise of the Develop the West campaign, and realizes that education and human-resource development

should be a top priority for national development. New technologies offer intriguing but uncharted possibilities for economic and educational development, and reform initiatives and experiments are going forward at a furious pace. Whether the new strategies will be enough to change the life trajectories of China's rural children, especially those living in poverty, remains an open question. The stakes couldn't be higher.



Our interviewers walking in the desert of Gansu.

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