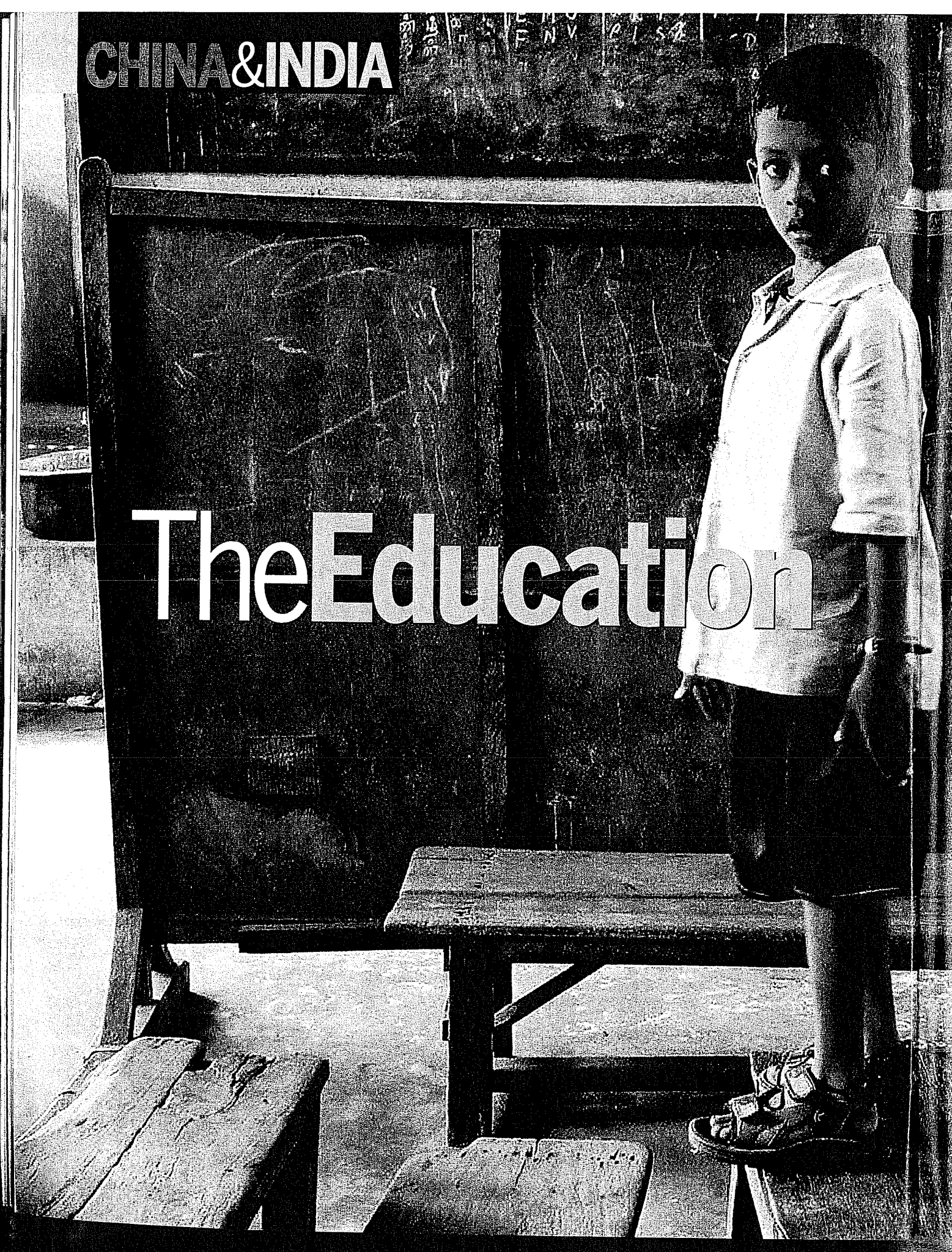
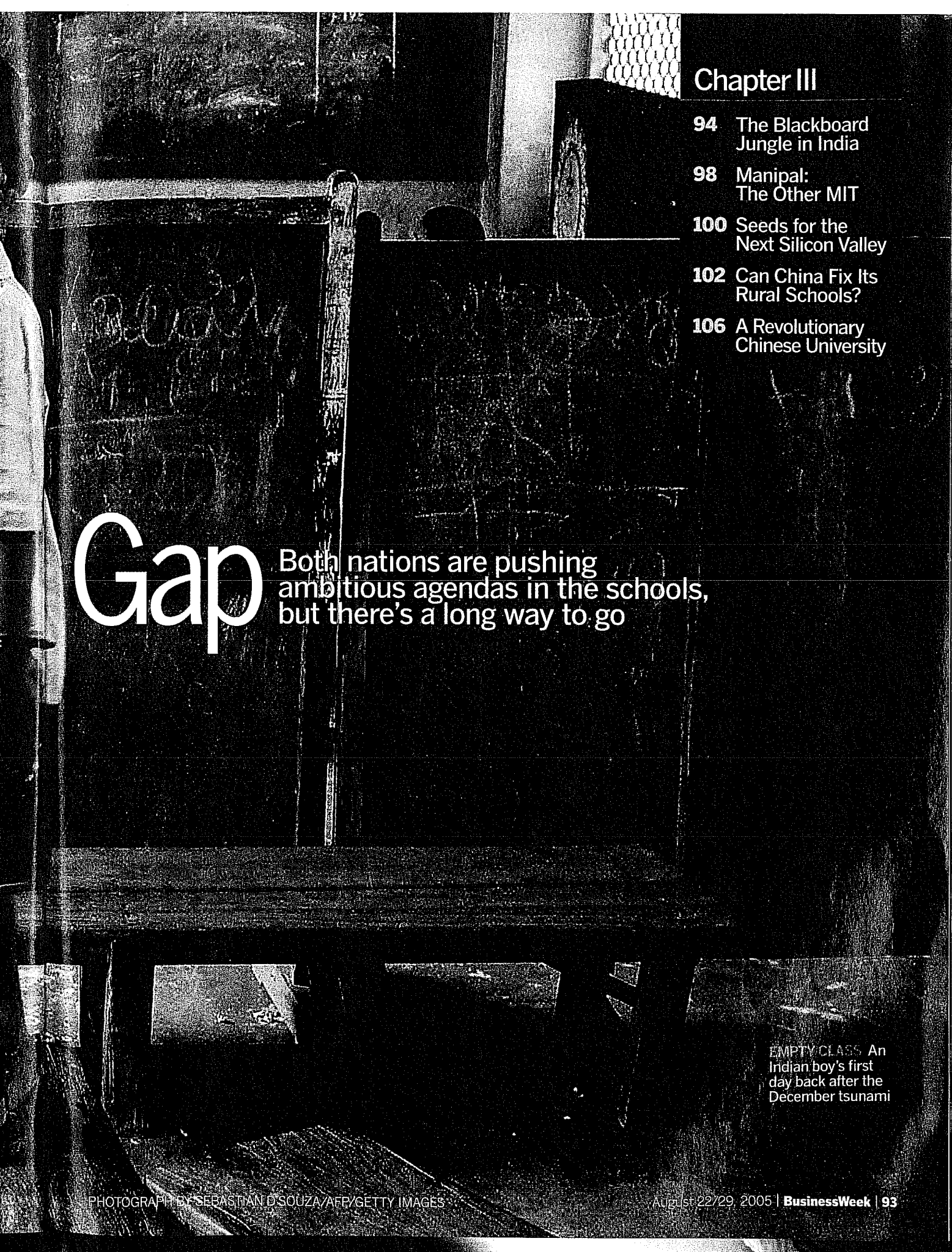
CHINA&INDIA

TheEducation





Gap

Both nations are pushing ambitious agendas in the schools, but there's a long way to go

Chapter III

EMPTY CLASS An Indian boy's first day back after the December tsunami

PHOTOGRAPH BY SEBASTIAN D'SOUZA/AFP/GETTY IMAGES

Trying to Tame the Blackboard Jungle

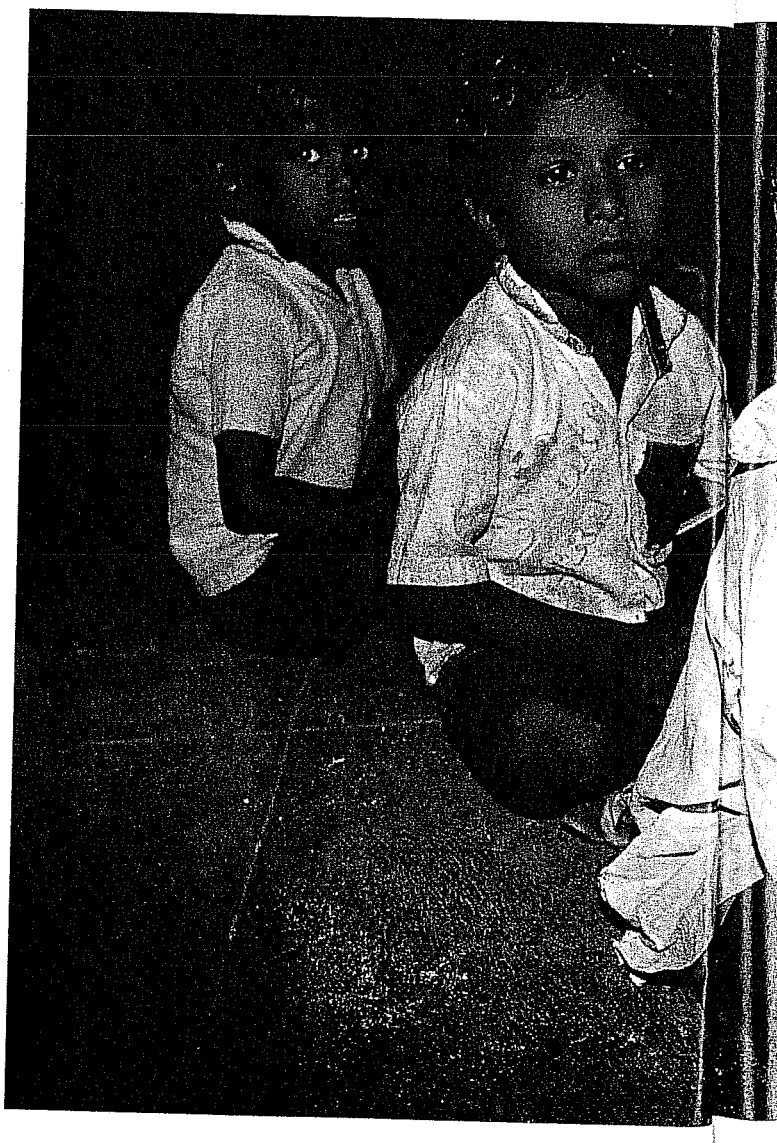
As more Indian children flood into schools, educators struggle to boost quality. BY MANJEET KRIPALANI

TO UNDERSTAND THE EDUCATIONAL challenges facing India, pay a visit to Dharavi, a poor and densely populated Bombay neighborhood. Its lanes are so small and winding that no vehicles can traverse them. Open drains run outside the crudely built brick and corrugated metal homes, and garbage is piled high every few yards. The area, where 1 million of Bombay's poorer migrants live, is Asia's largest slum.

This is the home of the Dharavi Transit Camp School, one of two in the neighborhood run by the municipal corporation. Outside the high school gates, ragged, half-naked children play amid scattered garbage. Some run in and out of the gates, but nobody stops them. There is no school guard, and the teachers who pass through don't bother. The school, four stories high, is shorn of paint and looks grim under the monsoon clouds.

It's past noon, and schoolchildren are starting to straggle in for the afternoon shift of classes. The girls wear blue pinafores, the boys blue shorts and shirts. Many are barefoot. Like most state-run schools in Bombay, the Transit Camp School runs classes up to seventh grade, in two shifts, with each floor teaching classes in a different language, reflecting the regional origins of its 6,000 students. Blackboards, tables, and benches crowd the 12 classrooms on each floor. With 100 students per class, the sessions sometimes spill into the corridors.

On this day, Gautam Dandage, a cement spreader, has brought his 8-year-old daughter, Ujwala, to school. She is doing O.K. in class but his older son, he complains, has lost his motivation. "My son failed because of the class master. He never showed up for class all year," Dandage gripes. The deputy head teacher, Sampat Bhandare, tries to shush the worried father, explaining that the teacher in question was sick and the



VILLAGE SCHOOL In rural areas, teachers often don't show up

MARK HENLEY/PANOS PICTURES

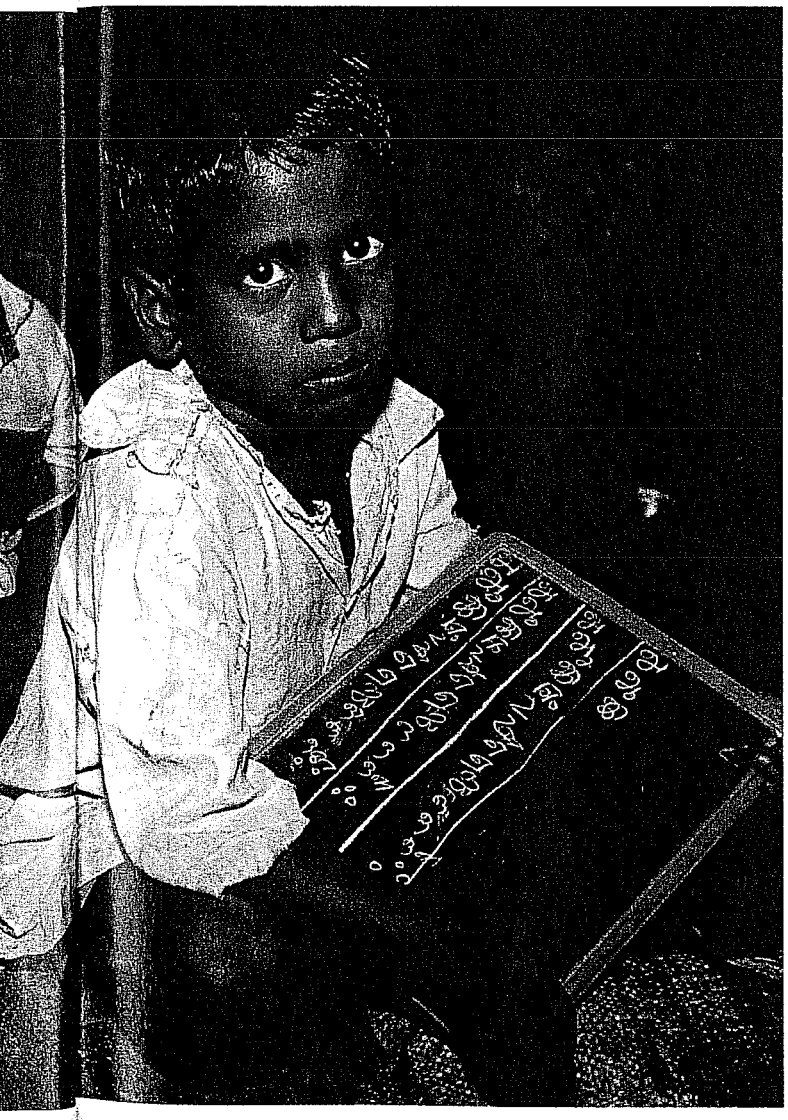
school could not find a replacement. Dandage isn't convinced.

A day at school in Dharavi is a vivid lesson in India's education gap. In a nation striving to be a global leader in brainpower, the Transit Camp School underscores the enormous scale of India's struggle to provide adequate education for its youth. India has the world's youngest, potentially most productive population. Nearly 500 million Indians are under age 19. In primary school alone, some 202 million students are taught by 5.5 million teachers in 1 million schools.

Yet while free and compulsory primary education became law in 2001, the quality of learning is poor and the failure rate is high. Even in fifth grade, some 35% of Indian children cannot read or write, according to Pratham, India's largest education nonprofit group. According to government statistics, just a quarter of students make it past eighth grade, and only 15% get to high school. Of the 202 million who start school, only about 7%, or 14 million, graduate. And without a fully literate population, India won't easily sustain the demands and aspirations of its people or become a global power. "The government is failing our youth," says Vimala Ramachandran, an education specialist and author of *Getting Children Back to School.*

Increasingly, Indian parents want their children educated, particularly in English and computing. That's not only critical for youth; it's the key to India's development. Education is a "ticket out of poverty," says New Delhi economist Surjit Bhalla. Parents understand that when India began to grow in the 1980s and 1990s, the educated got better jobs—"even if it meant going to the Gulf states and achieving blue-collar success," Bhalla notes.

But India's state system just isn't meeting people's aspirations. "It's two decades behind the population's needs," says Madhav Chavan, founder and program director of Pratham. Poor-quality teachers, a politicized education department, outdated learning methods, and the pressures Indian children face at home are just some of the roots of India's education gap. Many girls drop out of school after fourth grade, for example, to do household chores while their parents work. Just half of India's girls are literate, vs. nearly three-fourths of boys.



India's Schools: From Poor Marks To So-So

ENROLLMENT Has increased to 90% of the country's children aged 6 to 14, up from 75% in 2000.

DROPOUTS Some 75% of those enrolled drop out by eighth grade, and 85% quit by 12th grade. Less than half of those remaining graduate.

LITERACY Some 35% of children in fifth grade can't read or write, but literacy for India as a whole is 63%, up from 53% in 1995 and 45% in 1985.

GENDER GAP Some 78% of girls drop out of school, compared with 48% of boys.

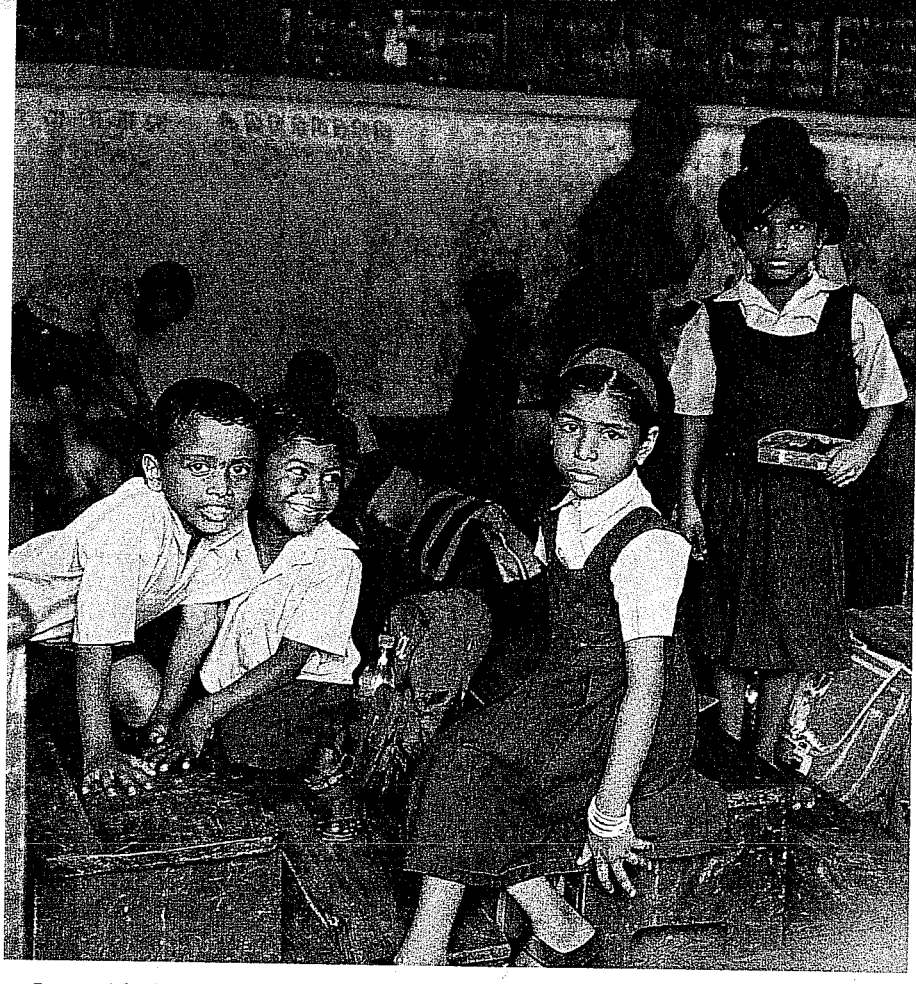
Data: Human Resources Dept., New Delhi; Pratham; Azim Premji Foundation; World Bank

TEACHER TROUBLES

INDIANS CAN'T BLAME the government for not trying to improve the situation. The Ministry of Human Resource Development has thousands of schemes aimed at enhancing educational opportunities. The most ambitious is the 2001 Sarva Shiksha Abhiyan, or universal education incentive program. Its $2.4 billion annual budget provides students with a meal a day, free textbooks, medical care, and remedial classes. The Congress Party, which returned to power in New Delhi last year, is pushing the agenda even further. The government's spending on education has gone from 3% of gross domestic product last year to 4% this year, and is expected to rise to 6% soon.

These efforts are making an impact. Almost 90% of all children are now enrolled in school—up from 75% in 2000. Yet the growth is a strain for some schools. In the poorer regions of Uttar Pradesh and Bihar, class sizes are now "too large to manage," says Venita Kaul, who oversees World Bank education projects in India. The Bank is providing $500 million for the Sarva Shiksha Abhiyan budget over three years until 2007.

Despite increased enrollments, graduation ratios are falling—even in top states such as Maharashtra, where Bombay is located. This year, 57% of the 10th-grade students in Maharashtra passed their final exams—a big drop from last year when 67% cleared the exam. "We aim for a zero dropout and failure rate," says Abasaheb Jadav, who is project director for the federal government's Sarva Shiksha Abhiyan in Bombay. Good intentions aside, the experts say India's educational system faces its most serious challenges at the classroom level.



DHARAVI
In the Bombay slums, classes are taught in various languages

SHARLESH MULE/INDIAPICTURE.COM

Start with the teachers. State-employed teachers earn up to $300 a month and often four times as much as private school teachers. But they are poorly trained, unmotivated, and often commandeered for other government services like election duty or overseeing polio vaccination drives. Consequently, teacher—and hence student—absenteeism is high. At the same time, increased enrollments—thanks to the midday meal now required in all schools—have caused a teacher shortage. As a result, in many schools, teachers have to handle up to four different grades at once, another blow to the quality of schooling.

Another issue is infrastructure. The government is boosting spending on schools, books, and classroom equipment, but the funding often doesn't reach the remote rural areas. In Bihar, India's poorest state, schools are crumbling buildings lacking roofs, windows, or blackboards. In Behrampur, a village about three hours away from the capital of Patna, the broken-down single-room school serves as a playground for the village's 200 children. Locals say the schoolmaster comes by every three or four days. Devbali Rai, a 30-year-old farmer, is near despair. "We want schooling. Our children must study," he says.

CURRICULUM CRISIS

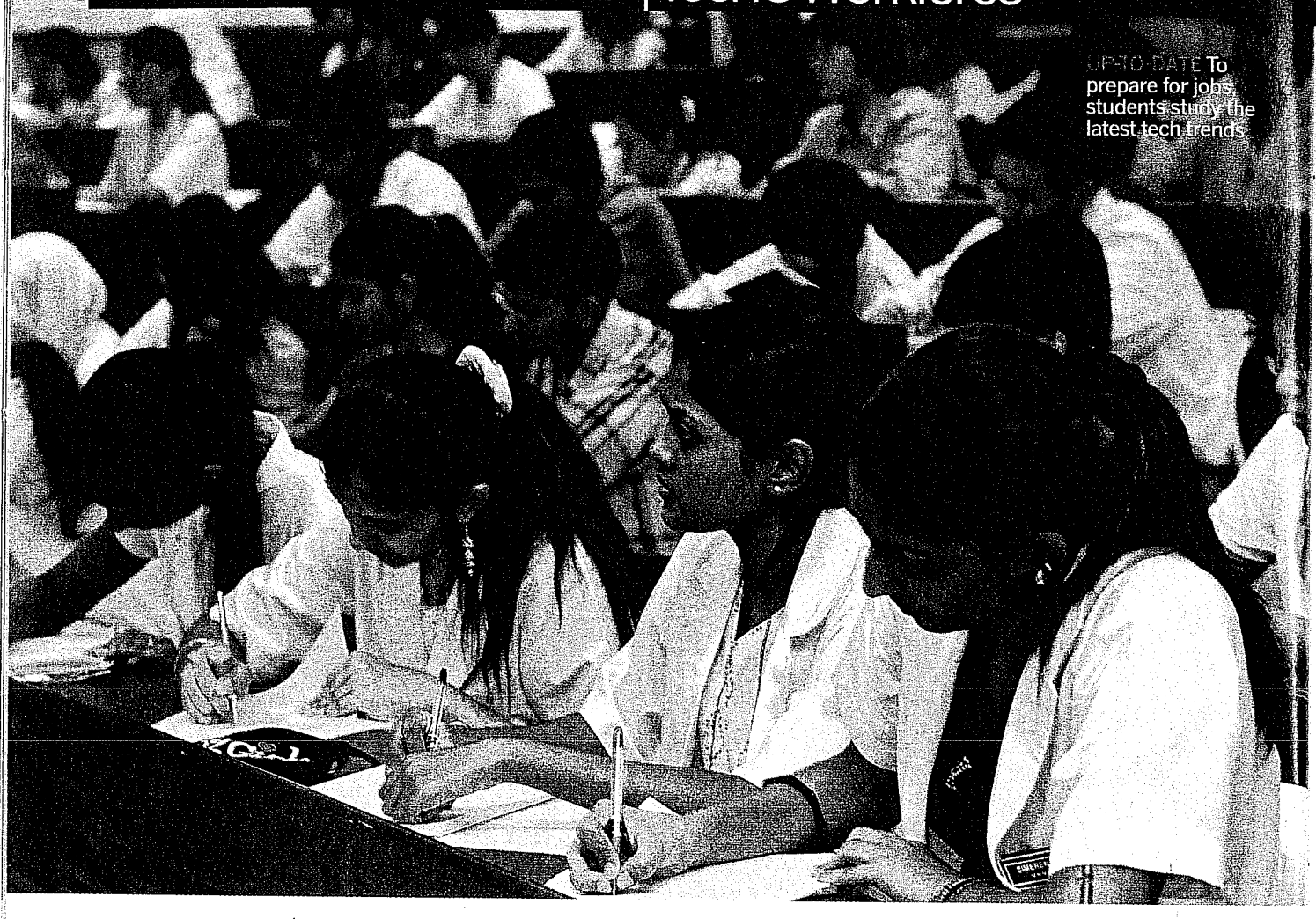
ADDING TO THE CAULDRON of problems is a curriculum crisis fueled by political rivalries. In 1998, when the right-wing Bharatiya Janata Party won the national elections, education became the first target of revisionist historians. School textbooks were rewritten to reflect the BJP's ultra-nationalist ideology. Then the Congress government reverted to the original facts when its party defeated the BJP in national elections last year. Now parents and teachers worry that another election will mean more tinkering with the school syllabi and textbooks. "This oscillating between the orthodoxies of the right and the left, the yo-yo-like swings in curricula, is driving parents and teachers mad," says Kanti Bajpai, headmaster of the Doon School, the country's most elite school.

All these difficulties are accelerating the rush to India's 100,000-plus private schools. For decades private schools such as the Doon School, modeled after Britain's Eton, have catered to the elite. Now even poor students are enrolling in private schools, where the tuition can range from $24 a year in remote villages to $15,000 at the top end. In underdeveloped states many private schools are just single rooms in village homes. But even in cramped surroundings students learn enough to take a school-graduating exam.

Despite the proliferation of private schools, few experts believe they are the solution to India's educational challenges. True, they tend to be better than their state counterparts. But many are unregulated, and they still serve just a fraction of the population. Privatizing education, while often suggested by experts, isn't the answer either. India is too large, and many of its poorest parts are so remote that few private educators would want to teach there.

Yet some experiments are taking place that could provide models for education reform. ICICI Bank has invested in organizations such as Vidya Bhavan Society that are experimenting with alternate teaching systems to replace rote memorization. One of its projects is in the state of Chattisgarh, which three years ago was carved out of the large and poor state of Madhya Pradesh with the idea that smaller states could be governed more easily. "We were new and inexperienced, we needed everyone's help," recalls Sanjay Kumar Ojha, an official whom New Delhi sent to help the state's Education Dept. Ojha and team have readied a new set of textbooks, plus teacher recruiting and training programs, in just two years. The new curriculums will be introduced in 2006. If successful, Chattisgarh could become a model.

Encouraged by such efforts, Pratham's Chavan confidently predicts "a major change in the provision of education" in the coming years. The driving force will be parents who desperately want to educate their children in English. In Kashmir, the government has already switched to an English-language-based school education from the first grade. Even in conservative, Hindi-dominated Rajasthan, English as a language is now taught from the first grade. The state of Kerala, which stood alone in India for its 99% literacy rate, is now joined by Mizoram and Himachal Pradesh in the north. Such efforts could one day help India close its education gap.



UP-TO-DATE To prepare for jobs, students study the latest tech trends

The Other MIT

Manipal Institute of Technology and other second-tier schools like it are India's real tech secrets. BY JOSEY PULIYENTHURUTHEL

RAJENDRA KUMAR NAYAK CON- siders himself a lucky guy. Sipping his favorite 60¢ milkshake at a trendy coffee shop in Manipal, India, he's rejoicing about the job he'll start soon, following his recent graduation from the Manipal Institute of Technology (MIT). Nayak will work as an industrial engineer at Wipro Fluid Power in Bangalore for $390 a month—a lucrative salary by Indian standards. But Nayak, 22, isn't simply lucky. He's gutsy and smart. The son of a steelworker, he gambled in 2001 by taking out a $7,000 loan and heading to Manipal. Four years later he's graduating first in his class. "MIT was expensive, but worth it," he says.

Nayak is an example of the breed of ambitious young engineers who will power the next phase of India's tech and industrial boom. And Manipal Institute of Technology is one of the leading Indian colleges educating this next generation. For decades the famed campuses of the Indian Institute of Technology were just about all the world knew of the country's technological genius. But lesser-known colleges such as MIT will be playing a key role as India continues on its fast-growth path. This second tier of some 2,240 engineering schools—55% of

PABLO BARTHOLOMEW/NETPHOTOGRAPH.COM

them public institutions, the others privately run—aren't nearly as exclusive as the IITs, which snap up just 2% of the 200,000 candidates who take its demanding entrance exam every year. Graduates of IIT's seven campuses rarely top 3,000 annually. The second-tier institutes educate far more Indian engineers—some 207,000 graduated in 2005—and fill an important need.

A YOUNG NATION

TO KEEP UP its 30%-plus annual growth in tech services, India requires more than 65,000 newly graduated engineers a year, according to software trade body Nasscom. New Delhi's Institute of Applied Manpower Research figures the country also needs about 10,000 engineers annually to fuel growth in other industries, including autos, chemicals, construction, metals, and energy. Moreover, since 35% of India's 1 billion people are under age 15, national demand for everything from roads to power grids to PCs will skyrocket, making the need for engineering skills urgent. Nasscom predicts enrollment in Indian tech schools will jump by 70%, to 600,000, by 2008.

Of the second-tier institutions, MIT is one of the most prestigious. It's part of a sprawling network of 53 private professional colleges called the Manipal Academy of Higher Education, located on India's southwestern coast. Founded in 1953 as a medical school by Dr. Tonse Madhava Anantha Pai, the academy trains its 30,000-strong student body in everything from hotel management to software development. "We have to give our people skills if India is to be a global power. We can't depend on the government alone to do that," says Ramdas Madhav Pai, the academy's chancellor and the son of its founder.

Like other top-notch engineering schools such as PSG College of Engineering in Tamil Nadu and Pune Institute of Advanced Technologies, MIT goes out of its way to ensure that graduates are prepared to move straight into jobs. Companies such as Motorola Inc. and network-storage outfit EMC Corp. often recruit Manipal students in the final weeks of their penultimate year. Once a student accepts an offer, the college creates final-year electives geared to his or her prospective job.

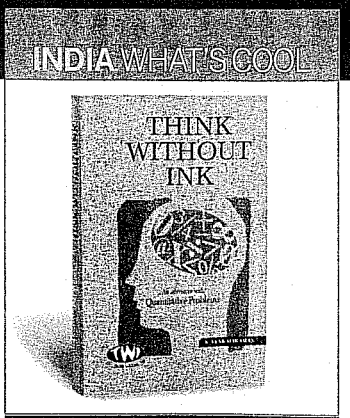
Infosys, Tata Consultancy, Wipro, and Satyam Computer Services, which together hired more than 40,000 engineers in 2004, take such cooperation a step further. They provide course material and train lecturers on developments in areas such as chip design, radio frequency identification, and network management. The collaboration pays off in shorter in-house training once graduates become employees. "We've brought down our training program to 52 days today from 76 days three years ago," says S. Ramadorai, chief executive of Tata Consultancy.

Although it's not as exclusive as IIT, Manipal is not easy to get into. Some 12,000 candidates applied for the 600 seats up for grabs last year. Compared with subsidized "IIT-ians," who cost the federal government $18,500 each by the time they complete their four-year degree, MIT students must pay $9,000 tuition for four years. That can be tough in India, where a typical urban middle-class household earns $800 monthly. With some 100,000 Indians heading to the country's 975 private engineering colleges, the student loan market is beginning to show signs of life. A 2005 mechanical engineering graduate from PSG College, Ramu Lakkumanan, is the fourth child of a paddy farmer in coastal Tamil Nadu. He took out a $700 loan to ease finances at home. The first graduate in his family, he is training to join Tata Consultancy.

Manipal Academy's Pai is striving to give students value for their money. His goal is to build an IIT-like campus that would cost students a fraction of what an IIT education costs the government. Currently the institute is working on a project to build a $7.6 million innovation and incubation center to house labs of Hewlett-Packard, Philips Electronics, EMC, and Infosys. All told, Manipal Academy is investing $23 million over three years in new facilities. Part of the funds for expansion come from the Academy's 9,000 foreign students, who pay two to four times what Indians pay.

Other private institutions are experimenting too. At PSG College, the faculty is planning a new "play-and-learn" approach, in which classes are broken into 20 minutes of lecture and 30 minutes of hands-on training. "To simulate real-life situations, we want students to meet customers, and [we want] faculty to spend two summer months with companies to solve their problems," says P.V. Mohanram, dean of PSG's mechanical engineering department.

India needs more cutting-edge educational institutions if it is to keep advancing as a technology-service provider and make the big shift to high-value manufacturing for global companies. Experts worry that only a third of India's second-tier engineering institutes provide an education that meets the benchmarks of major global corporations, forcing employers to spend big bucks training fresh gradu-

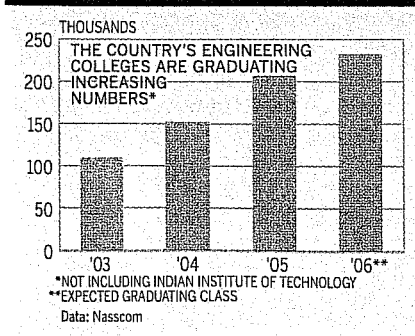


Pencils Only, Please

A thinking person's guide to the big B-school test

Nerds rule. The best-selling book in India is a 316-page tome called *Think without Ink: An Adventure with Quantitative Problems*, by K. Venkataraman. The $6 book helps readers excel at the Common Admission Test, known to nearly every mum in India as "the CAT"—a two-hour ordeal that is crucial for admission to the half-dozen elite Indian Institutes of Management. **Students emerging from the test "look like they've been through hell and back,"** says the author. To make that journey less arduous, Venkataraman offers up seven principles for critical thinking without laying pencil—or pen—to paper.

More Engineers On the Way...




Breaking new ground at MIT

PABLO BARTHOLOMEW/NETPHOTOGRAPH.COM

PABLO BARTHOLOMEW/NETPHOTOGRAPH.COM

ates. One reason is underpaid faculty. A professor with 15 years' teaching experience in a second-tier engineering school takes home $575 a month, less than one-eighth the salary of a software designer with similar experience. "The divergence between industry and academia is getting so acute that faculty recruitment is getting extremely tough," says S. Vijayarangan, principal of PSG.

All these issues explain why India must keep striving to raise its engineering education standards. One way to do that would be to encourage more cooperation between the IITs and other institutions. A first experiment in such collaboration—between three local colleges and IIT Bombay—will begin soon in Maharashtra. The colleges will follow the IIT syllabus and work together on research projects. "India needs 10 times more graduates of IIT quality. Only then will we be globally competitive," says P. Rama Rao, a former vice-chancellor of Hyderabad University. Rao is coordinating the project and pushing bureaucrats to replicate the model with IITs and colleges in Madras, Kharagpur, New Delhi, and Kanpur. If such efforts succeed, India's brainpower is likely to keep surprising the world.

Planting the Seeds for The Next Silicon Valley

At the Indian Institute of Technology (IIT) campus in Kharagpur, near Calcutta, a small team of engineers is beavering away on what they hope will prove a killer competitor to the BlackBerry. At IIT Bombay, an earth sciences professor is about to launch a company that will tap the vapor of geothermal springs to drive turbines, generators, and power stations—the first company to do so in India. Across the country, at IIT Madras, students and professors have spun off a startup that's working on a no-frills network computer aimed at the Asian corporate and government markets that will sell for just $100. "We dream of building billion-dollar-product companies here," says Ashok Jhunjhunwala, an electrical engineering professor at IIT Madras. "We believe we have laid the foundation for them."

No one knows how many of these products will take off. But the odds are that some of the fledgling companies will make real money. Dozens of such projects are now taking shape at India's elite IITs. In the same way that Stanford University and Massachusetts Institute of Technology helped spawn Silicon Valley and Route 128 in the 1970s and '80s, Indian institutions are encouraging professors and students with business ideas to take the plunge. The schools are providing initial office space, labs, and seed money to "incubate" startup companies. Some are also building tech parks to attract companies willing to collaborate. Since India began opening its economy in the early 1990s, the six (recently expanded to seven) IITs have created some 50 new companies. The pace has accelerated in the last three years.

That's a big change from the early days. When they were conceived in the 1950s, the IITs churned out top-notch engineers to meet an almost insatiable appetite from the country's steel, construction, power, chemical, defense, and textile industries. The schools so excelled at the task that they became a world-famous source of engineers, particularly for the U.S. But actual involvement by the schools in startups was almost nonexistent. Now students and professors alike are busy trying to become entrepreneurs in commercially applicable areas where IITs are strong, such as telecom, microelectronics, computer sciences and software, heat transfer and, of late, biochemistry and biotechnology.

BOMBAY Searching for a billion-dollar product

The big challenge is finding funding. IIT Kanpur, for example, has a budget of just $1.15 million to sprinkle around a half dozen projects. IIT Madras has teamed up with institutions such as ICICI Bank Ltd., State Bank of India, and other local state-run sources to raise up to $230,000 for each of its 16 companies. And IIT Kharagpur is creating its own fund. "We have plans for a $230 million venture fund that we will raise from our alumni, investors, financial institutions, and the government," says Partha Pratim Chakrabarti, dean of sponsored research and industrial consultancy at IIT Kharagpur. All these efforts are necessary because Indian startups aren't much on the radar screens of American venture capitalists, who invested only $240 million in Indian companies last year. They invested $20.4 billion in the U.S.

INDIAN TECHNICAL INSTITUTES ARE HELPING TO INCUBATE STARTUP COMPANIES BY PROVIDING OFFICES, LABORATORIES, AND CAPITAL

Funds are rarely available for companies that don't have a track record of sales and customers. For example, Midas Communications Technologies Ltd., an IIT Madras spin-off that makes broadband and wireless telecom equipment, finally raised $10 million from American venture capitalists Argonaut Private Equity in July, 2004, seven years after it was founded. Midas' sales are expected to top $104 million this year, 50% higher than 2004. Its success is a boon for IIT Madras, where the electrical engineering department helped develop the technology for Midas products. Midas and other licensees of the technology paid the IIT $3.5 million in royalties last year.

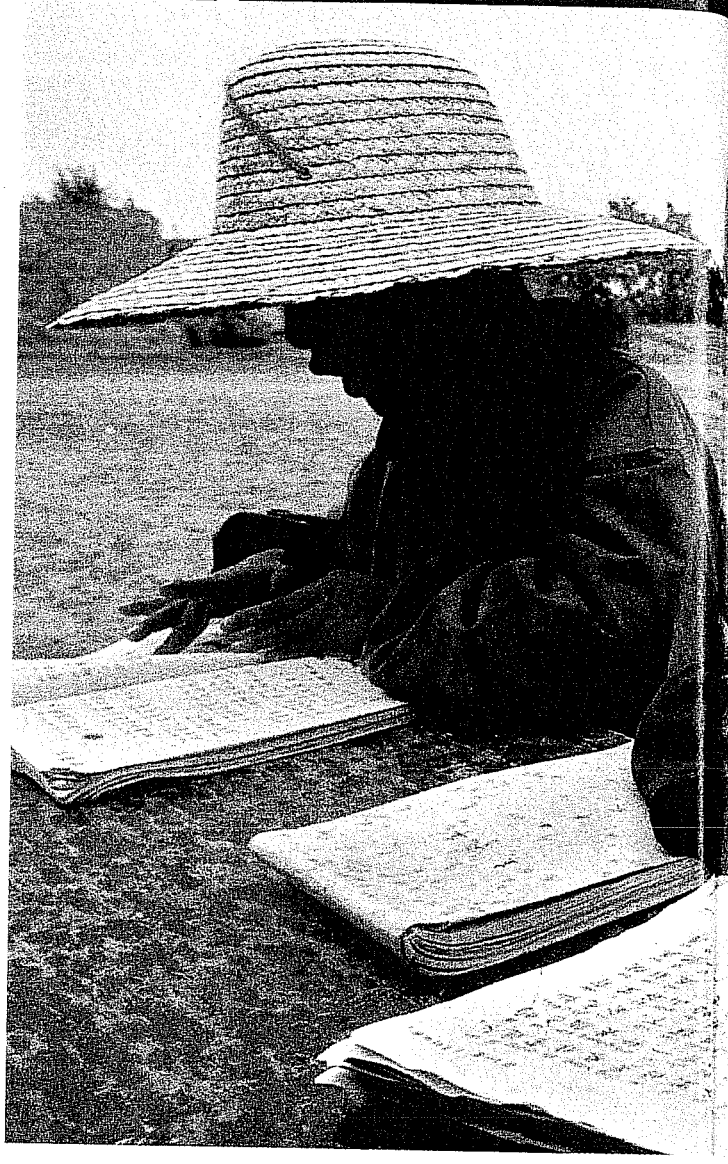
Of course, applied research and business incubation at India's top technology institutes remain a far cry from their U.S. peers. But dozens of IIT spin-offs are a start. If India's software and tech stars can start to attract more venture funding, the breakthroughs of the future may come just as much from Bombay and Madras as Silicon Valley and Boston.

–By Josey Puliyenthuruthel in Madras

ATUL LOKE/ASIA-IMAGES

No Peasant Left Behind

China has made great strides. Now can it fix its backward rural schools? BY BRUCE EINHORN



CHINA

AT SOUTH CHINA NORMAL UNI- versity's primary school, the walls at the campus gate are painted bright red, blue, and yellow. Inside, students in their colorful uniforms scurry past giant posters telling the story of *Snow White and the Seven Dwarfs*. The leafy campus has three basketball courts, a track, and the latest in child-safe playground equipment. A new computer lab is packed with 30 Lenovo PCs and liquid-crystal display monitors, and there's a school Web site.

These are just some of the ample resources the government of Guangdong is lavishing on one of its pet educational projects. Because Beijing now considers overhaul of the school system to be critical to economic growth, public schools like South China Normal are being turned into laboratories where new pedagogical approaches are tried. The best methods will then be seeded across the nation's vast network of schools.

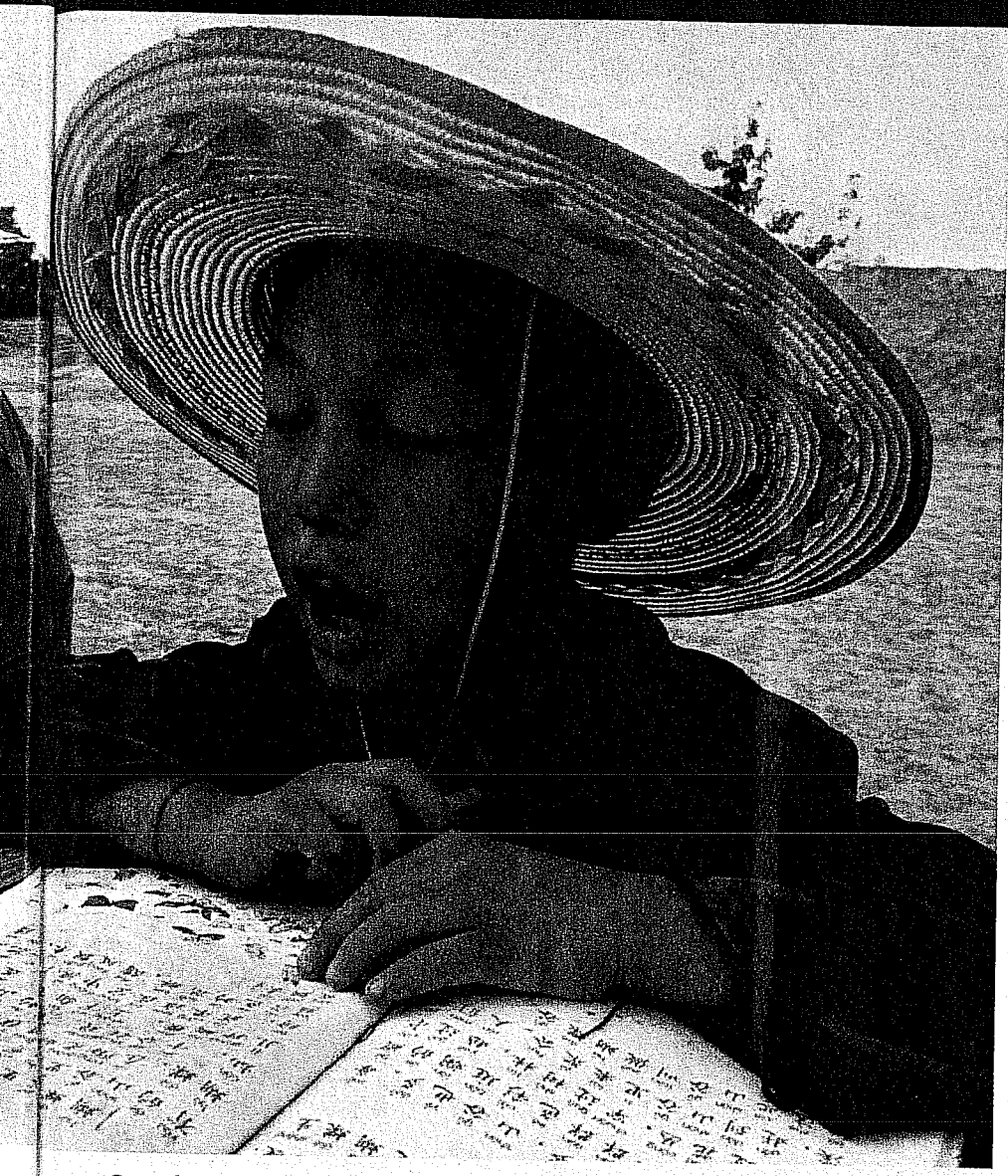
For one thing, educators are shifting away from lecturing and exam-based grades—just as the U.S. is embracing more standardized metrics. In China, education czars are putting less emphasis on tests and more on in-class experiments and discussions. "Students cram and recite," says Shen Baiyu, director of curriculum development at the Education Ministry in Beijing. "They remember, but they don't understand." The lack of creativity, says Shen, is "a fatal disadvantage of Chinese education."

That educators are focused on such questions is testament, in a way, to how far China has come educationally. The country has achieved enough of the basics that planners can focus on the next level of pedagogical quality. Consider that China has a literacy rate of 85%, compared with just 60% at the end of the Cultural Revolution, the decade of radical upheaval that ended after Mao Zedong's death in 1976. Moreover, thanks to a mid-1980s policy to provide universal education for grades one through nine by 2000, the literacy rate among people between the ages of 12 and 40 is now 96%. "Almost every child can have a basic education," says Wei Yu, former Education Vice-Minister who is now a vice-president of the Chinese Association for Science & Technology. "That's a big achievement if you think how large our country is."

STARK DISPARITIES

THE SCALE OF THE educational challenge is indeed daunting. China has 218 million children in grade school through high school, more than the total populations of Japan and South Korea combined. There are over 10 million teachers and more than 500,000 schools in all, about 75% of which are scattered across the vast countryside, far from the coastal boomtowns. Elite schools like South China Normal may be well off, but overall spending is low: China spends just 3.2% of its gross domestic product on education, vs. 5% for the U.S., though that's more than ever before. "There is little doubt that [China's leaders] have done extremely well," says

BIN HAN/FEATURECHINA



HARDSHIP Schools in poor rural areas get few resources

Gerard Postiglione, a professor of education at the University of Hong Kong.

Today's big worry is that the system can't accommodate the next stage of growth. Beijing has prepared an ambitious road map for the country's educators, part of a broader goal for China to become a developed nation capable of competing with the U.S., Japan, South Korea, and Taiwan in science and technology. Plenty of stellar grad students from China attend top U.S. universities, but the government wants to get more Chinese into the ranks of the highly educated at home. To do so, they have set a goal to push high school enrollment, now at 40%, up to 70% by 2010; university enrollment is to reach 20%, vs. 13% today. By 2020, the government wants 85% in high school, and it's aiming for university enrollment to exceed 40%. (In the U.S., the high school enrollment rate is about 93%, and university enrollment is about 60%.)

TECHNOLOGY GAP

CHINA'S ELITE also worries that the school system favors wealthy areas along the coast at the expense of poor inland provinces. The disparities are stark in places like Pucheng, a rural county in north-central Shaanxi province about 60 miles from Xian, the ancient capital of the Han Dynasty. Unlike Guangzhou's cheerful schoolyards, Pucheng's schools are covered with grime. The students sit at backless wooden benches, two to a desk, in classrooms where the lights are turned off to save power. Puddles of water stain the cement floors.

Another rural feature: Boys far outnumber girls in many classes. Peasants traditionally favor boys and often keep their daughters out of school. More recently, the one-child policy has led to a preponderance of boys nationally, since some families are suspected of aborting female fetuses to make way for male children. The male-female discrepancy can be extreme: 9 girls to 21 boys in one class.

Pucheng schools don't have deluxe new computer labs, either. Administrators are happy to have one PC with a satellite

Looking to Upgrade:

The system is vast...		...and has performed well...	...but it must do better
ELEMENTARY SCHOOLS	457,000	■ Literacy among adults 40 years old and younger is at 96%, vs. 60% at the end of the Cultural Revolution	■ The gap between wealthy urban schools and poor countryside schools is widening
JR. HIGH SCHOOLS	66,000	■ K-9th grade is compulsory and enrollment rates are high	■ Despite curriculum reforms, rote learning and cramming for exams remain common
HIGH SCHOOLS	33,000	■ Schools are revamping curriculums to encourage more creative thinking	■ Only 40% of 9th graders go on to attend high school
TOTAL ENROLLMENT	218 million		
NUMBER OF TEACHERS	10.6 million		
TOTAL SPENDING ON EDUCATION	3.2% of GDP, or $56 billion		

Data: Chinese Education Ministry, *BusinessWeek*

dish for downloading education programs beamed to them from Beijing, part of a program for rural schools run by the Education Ministry. Sun Chengli, a 24-year-old Pucheng native, is in charge of training teachers how to use the equipment. It's not much compared with the largesse at Guangzhou schools, but it's a start. Training "is not very difficult," says Sun. "The teachers are all very motivated."

EASE THE BURDEN

CLOSING THE RICH-POOR GAP has become a hot issue, especially since President Hu Jintao and Premier Wen Jiabao took office in 2003. Both often talk about the need to alleviate poverty in interior provinces by encouraging more investment and infrastructure there. The overriding worry is that sharp inequality could lead to social unrest, which would in turn spook foreign investors, threaten economic development, and weaken Beijing's rule. "The lack of equality has caused serious concern," says Wang Rong, head of the department of education economics and administration at Peking University. "If you don't solve this problem, then you can really have trouble. Education is a starting point."

LEG UP This university-affiliated high school is one of China's most elite

■ BEIJING IS BETTING THAT **EDUCATION CAN HELP CLOSE THE CHASM** BETWEEN RICH AND POOR, REDUCING THE THREAT OF SOCIAL UNREST

So Beijing has been working to ease the burden on families and governments in poor regions. A few years back it capped the amount schools can charge families for textbooks and miscellaneous fees to supplement meager school budgets. In 2003 the central government followed up by launching a $96 million-a-year program to subsidize the costs of textbooks in poor areas. Working with the charitable foundation of Hong Kong billionaire Li Ka-shing, who funds many educational initiatives (page 106), the government has provided satellite dishes and PCs to 70,000 schools in the countryside, at a cost of $1.2 billion, with plans to double that amount by 2007. "There are lots of smart students in the villages, but they're not exposed to information and knowledge," says Wang Zhuzhu, deputy director of the national center for educational technology at the Education Ministry. "It's important to change the mind-set."

Like the U.S., though, China has a decentralized education system in which local governments foot much of the bill. Funding can vary widely, depending on a province's fortunes. Shaanxi is one of China's poorest, with a per capita income of just $170, vs. $1,800 in Guangzhou. The provincial government spent just $72 million on education last year for 10 million students in all grades. In a new program, officials plan to exempt 1.6 million students from some school fees. But given widespread poverty, Lu Mingkai, deputy director general of the provincial education bureau, says there are limits to what the province can do. "People's desire for good, quality education has significantly increased; everybody wants their child to go to the best school," he says. "But there's a gap."

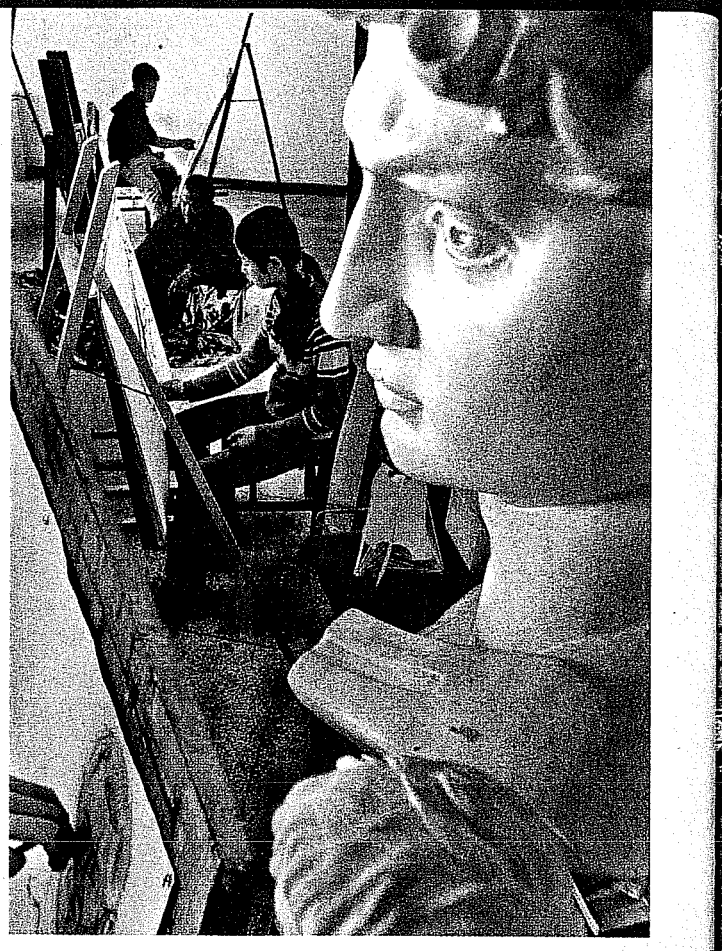
Even wealthy cities have their problems, namely legions of migrant workers who arrive in search of jobs. The size of the "floating population" is estimated at 120 million, about 8 million of them school-age children. In Beijing alone, there are 340,000 migrant children, many of whom aren't permitted to attend the city's schools. So they enter schools set up by the migrants themselves that are unlicensed and often located in rundown neighborhoods. Even so, migrant families, which make about $900 a year, pay more than $100 per child to attend. There are more than 200 such schools in the capital, estimates Han Jialing, professor at the Institute of Sociology of the Beijing Academy of Social Sciences. Recently, responding to the government's prodding on inequality, Beijing has let about 240,000 migrant children attend official schools, up from 80,000 two years ago.

The new measures should help some of China's poor families. But even as educators talk about addressing educational inequality and revamping curriculums, scoring well on entrance exams remains the key to upward mobility in the Chinese school system. And unlike poor families in Shaanxi, the wealthy residents of cities like Guangzhou have the cash to help their children do well. Chen Xuqi, a 13-year-old student at South China Normal's primary school, says she and her friends spend weekends at cram seminars to study English and math. They're getting ready to enter junior high school and want to ace the entrance exams. "We always talk about this," says Chen in near-perfect English. "All the people want to get into a good school." For China's education reformers, coming up with the money is just the start. ■

RICHARD JONES/SINOPIX

A Whole New School Of Thought

Shantou University offers a blueprint for education reform. **BY BRUCE EINHORN**



ART CLASS Every department is getting a U.S.-style makeover

CHINA

JULIA HSIAO, AN ASSISTANT VICE-chancellor at the University of California at Berkeley, has participated in countless commencements over the years, and this one had all the usual trappings, students in caps and gowns, proud parents snapping photos, a marching band playing *Pomp & Circumstance.* But the ceremony in late June was different in one key respect. The graduates were from Shantou University, an upstart school deep in China's Guangdong province.

Staging a U.S.-style graduation was the latest accomplishment for Hsiao, who for the past four years as vice-president for student and academic affairs at Shantou has been trying to transform the school into a showcase for Chinese education reform. Although it is a public university, Shantou gets most of its funds from one of the world's richest men, Hong Kong billionaire Li Ka-shing. Li tapped Berkeley's Hsiao, who in turn recruited other ethnic Chinese academics, some of whom travel back and forth between their home universities and Shantou.

This star-studded corps of American-trained educators wants to ditch tradition and remake Shantou in the image of a U.S. university. They're introducing new teaching methods, overhauling the curriculum, and giving Shantou's 8,000 students more responsibility for their own education. Instead of a set of required courses, Shantou now has a credit system, the first of its kind in China. Almost nothing is sacred. Hsiao and her colleagues are shaking up departments from engineering to medicine to the arts and journalism. Architects from Hong Kong, Taiwan, and Europe are redesigning the campus of drab white buildings. PricewaterhouseCoopers is modernizing the school's accounting.

Above all, the reformers are focused on educational quality. The goal is to replace rote learning, a tradition that dates back to the Han Dynasty, when rulers introduced exams for would-be mandarins, and instead emphasize creativity. In the past, students crammed only to spit back the information on tests. The Chinese call this pedagogical style *tianya,* the word for force-feeding a duck. Now, says Hsiao, Shantou is hoping to nurture students to "really be inspired to be creative, inquisitive learners."

NO MORE 'FORCE-FEEDING.' NOW TEACHERS AIM TO NURTURE STUDENTS' CREATIVITY AND CURIOSITY

The Shantou experience could serve as a model for other Chinese schools. Political leaders are setting their sights on higher education and aim to boost university enrollment sharply. Still, since elite schools in Beijing and Shanghai won't be able to absorb so many new students, universities in second- and third-tier cities like Shantou will be thrust into important roles. "There is huge demand that has been left neglected," says He Jin, program officer at the Ford Foundation in Beijing who has helped develop U.S.-style community colleges in China. "That's where the future is."

With a population of 1.2 million, a mere speck in a country of 1.3 billion, Shantou is an unlikely place for bold experiments. In the late 1970s, when Deng Xiaoping first opened China to the world, Shantou was one of a handful of southern cities named as special economic zones. But it was too isolated and never boomed. Today there's just one flight a day to Hong Kong, and China's intellectual hubs are far to the north in Beijing and Shanghai. Shantou may never be the Athens of China, but its university reformers are determined to try. ■