

**“Education Systems Compared: U.S. and Chinese Government Reforms and
Investments in Public Schools”**

By Patti Mohr

This paper examines the U.S. and the Chinese educational systems. It analyzes the basic governance structure of the two systems, identifying each country’s method for setting academic standards and for financing school services. The paper examines challenges inherent within each system. Namely, it shows that neither country provides an adequate level of equitable service to its student population. It considers the relative size of the respective education systems and explores recent changes in the educational outcomes. It briefly discusses reasons why policymakers in both countries are reforming national education policies and investing more money in public schools.

On many points, this paper pays closer attention to China’s education system than it does to the U.S. system. This is to facilitate a better understanding of the Chinese education system, which is rarely examined by Western researchers due to the difficulty in finding sufficient data. For most issues, however, this paper addresses developments in both China and the United States.

The goal of this study is to gain a better understanding about the strengths and weaknesses of each system and identify areas where U.S. and Chinese policymakers could learn from each other. The purpose is also to shed light on the ongoing policy discussion about the role education plays in enhancing the global competition for jobs. While a thorough analysis of the relative competitive strengths of each economy is

beyond the scope of this paper, this fact-based comparison of the education systems of the world's two largest economies can inform the discussion.

The hope is that by providing a comparative overview of the U.S. and Chinese school systems, this paper will provide context for understanding how countries use education as a tool for economic development.

Background

Thirty years of market reforms in China have presented opportunities as well as challenges for both the Chinese and for Americans. As China has opened up its economy to the world, the world has opened up to it by sending it jobs and investments. Since 1979, China's economy has increased by 1,712 percent as its trade has expanded and as foreign direct investments increased 173-fold.¹ (See Table 1.) By 2007, China's economy was growing at an annual rate of 13 percent while the U.S. economy was growing by 2 percent per year.²

Table 1. Economic growth in China and the United States, 1979-2007

	1979	2007
China		
GDP	\$176.6 billion	\$3.2 trillion
GDP Growth (annual%)	8 Percent	13 Percent
FDI Inflow	\$80,000	\$138.4 billion
United States		
GDP	\$2.27 trillion	\$13.75 trillion
GDP Growth (annual%)	6 Percent	2 Percent
FDI Inflow	\$8.7 billion	\$237.5 billion

Source: World Bank, World Development Indicators

¹ World Bank, World Development Indicators. (accessed May 2, 2009)

² Ibid.

Some people see China's rapid economic growth as a threat. They view the global integration of China's massive and low-cost labor force, in particular, as cause for concern their own job security. These fears are exacerbated by reports that foreign students outperform U.S. students on international tests and that Chinese universities now graduate more engineering students than U.S. universities do.³

Several studies and reports give this group reason to worry. According to one study, U.S. schools have not raised student outcomes in the last 30 years.⁴ Furthermore, a 2008 documentary, *Two Million Minutes*, aggravated U.S.-based anxieties by suggesting that Indian and Chinese high school students study harder and outperform U.S. students in science and math.⁵ One survey sponsored by the Chinese suggests that Chinese students spend more time studying for classes than U.S. students. (See Table 2.)

Meanwhile, other researchers argue that fears about U.S. students falling behind their foreign peers are unfounded, and they see opportunities in China's rapid economic rise. Education reporter Jay Mathews writes, "The widespread feeling that our

Table 2. Study Habits

	Spend more than 2 hrs per day Studying	Spend less than 2 hrs per day Studying
China	57%	43%
United States	25%	75%

Source: China Youth & Children Research Center (2008)

³ Friedman, Thomas. *The World is Flat: A Brief History of the 21st Century*. Farrar, Straus and Giroux. April 2005.

⁴ Stacy Teicher Khadaroo. "High-schoolers have made little progress since the 1970s, study says." *The Christian Science Monitor*, April 28, 2009, <http://www.proquest.com.mutex.gmu.edu/> (accessed May 9, 2009).

⁵ Compton, Robert A. "Two Million Minutes." <http://www.2mminutes.com/>

schools are losing out to the rest of the world, that we are not producing enough scientists and engineers, is a misunderstanding fueled by misleading statistics.”⁶

While the debate over global competition continues, there is a worldwide consensus that universal and high-quality education is an essential ingredient for ensuring that current and future workforces can compete for high-valued jobs in the global economy.⁷

That is especially true for economies reliant on expanding service sector jobs...

Yet developed and developing countries alike have difficulty in making high-quality schooling available to all their citizens. The following comparative review of Chinese and U.S. investments in their schools will help elucidate that point.

National Control

The most notable difference between China’s and the United States’ education systems relates to governance. In China, the central government controls all decisions regarding educational standards, curriculum and course material.⁸ Moreover, the central government establishes the age for which children can begin school and instructs primary and secondary schools how to teach each subject.⁹ China’s Constitution clearly gives this authority to the central government. It says:

“The state runs schools of various types, makes primary education compulsory and universal, develops secondary, vocational and higher education and promotes pre-school

⁶ Jay Mathews. “Grade change: Students abroad, it turns out, are not outperforming Americans.” *Boston Globe*. Ideas section. October 26, 2008.

http://www.boston.com/bostonglobe/ideas/articles/2008/10/26/grade_change/

⁷ Greenspan, Alan. *The Age of Turbulence: Adventures in a New World*. The Penguin Press. 2007. Pgs.392-408.

⁸ “Math and Science in a Global Age: What the U.S. Can Learn from China.” Asia Society. 2006. Pg. 13

⁹ Ibid. (Asia Society, “Math and Science.”)

education. The state develops educational facilities of various types in order to wipe out illiteracy and provide political, cultural, scientific, technical and professional education for workers, peasants, state functionaries and other working people. It encourages people to become educated through self- study. The state encourages the collective economic organizations, state enterprises and undertakings and other social forces to set up educational institutions of various types in accordance with the law. The state promotes the nationwide use of Putonghua (common speech based on Beijing pronunciation).”¹⁰

Despite the strong central-government role in planning policies, the state is laissez-faire in some respects. The constitution, for instance, advises citizens to undertake “self-study” activities and encourages public and private institutions to establish educational institutions of various types.¹¹ Furthermore, provincial, county, township and village governments are responsible for planning and managing education services, financing the construction of school buildings, and paying teachers salaries.¹² Nevertheless, it is important to remember that China’s central government establishes the academic standards which all schools must meet.

¹⁰ Constitution of the People’s Republic of China. Article 19.
<http://english.peopledaily.com.cn/constitution/constitution.html>

¹¹ Ibid.

¹² Note: Wang Dewen identifies the levels of responsibilities as follows: “Provincial governments strengthen the overall management of compulsory education in its province, provide necessary financial support, supervise the progress and inspect the results of compulsory education at various cities and counties. County governments are responsible for making county-level overall planning of education and financing for basic education in the whole county. Township governments set up agencies, to carry out responsibilities assigned by upper level governments under the direct leadership of township governments and county education administrative departments, collect and manage educational funds. In addition, village is the rural grass-root governance organization. In the process of implementing rural compulsory education, villages take up the responsibilities of maintaining dangerously dilapidated school buildings, improving teaching facilities, improving teachers’ income, paying the salaries of teachers hired by local people, managing schools’ properties, defending schools’ rights and privileges, mobilizing children of school age to attend school and participating in the supervision of school administration. Source: Wang Dewen. “China’s Rural Compulsory Education: Current Situation, Problems and Policy Alternatives.” Working Paper Series No. 36. Institute of Population and Labor Economics, CASS. 2003. <http://iple.cass.cn/file/36.pdf>

By contrast, the U.S. Constitution declares that all powers not delegated to the federal government are “reserved to the States.”¹³ Consequently, each U.S. state establishes its own academic standards for subjects and overall curriculum requirements.¹⁴

This decentralized governance structure is a matter of significant debate within the United States. Some researchers oppose the state-run approach, arguing that countries that outperform U.S. students on international tests have one thing in common: national standards and core curriculum requirements.¹⁵ Other researchers say states should continue to take the lead in setting academic standards.¹⁶ Still others argue in favor of compromise. For example, one proposal emphasizes cooperation between states and the national government: States could continue to maintain control, but they would be required to follow national guidelines when designing academic standards and curriculum requirements.¹⁷

The U.S. Congress flatly rejected a proposal to nationalize academic standards during consideration of the 2001 No Child Left Behind Act, but the issue is far from settled.¹⁸ Several presidential candidates for the 2008 election, including Sen. Chris Dodd, introduced proposals to adopt the compromise approach using federal fiscal

¹³ U.S. Constitution. <http://www.usconstitution.net/const.html>

¹⁴ Mohr, Patti. “Senator revives push for national math and science ed standards,” *Education Daily*. January 10, 2007.

¹⁵ Randi Weingarten. “The time has come to consider national standards.” *American Teacher*, April 1, 2009. <http://www.proquest.com.mutex.gmu.edu/> (accessed May 9, 2009).

¹⁶ “Achieve Report Shows States Taking Lead on Developing Rigorous Standards.” *The Hispanic Outlook in Higher Education*, September 22, 2008, 43. <http://www.proquest.com.mutex.gmu.edu/> (accessed May 9, 2009).

¹⁷ Jo Ellen Roseman, Mary Koppal. “Using National Standards to Improve K-8 Science Curriculum Materials.” *The Elementary School Journal* 109, no. 2 (November 1, 2008): 123. <http://www.proquest.com.mutex.gmu.edu/> (accessed May 9, 2009).

¹⁸ Patti Mohr. “Senator revives push for national math and science ed standards.” *Education Daily*. January 10, 2007.

incentives.¹⁹ More recently, President Obama signed a stimulus bill into law that sends billions of dollars to states for public education on the condition that governors promise to raise academic standards and improve the quality of tests.²⁰ Through the power of the purse, the U.S. federal government is increasing its role in state standard-setting.

The federal role in education has been growing since President Carter and Congress created the Education Department in 1979. More recently, federal testing and accountability mandates under the 2001 No Child Left Behind Act marked a significant shift away allowing states to make all decisions about education policy.²¹

Fiscal Decentralization

Although the two countries differ in way they govern schools, they appear to be remarkably similar in the way they finance them. In both cases, schools have garnered most of their resources from local revenue sources, such as property and agricultural taxes.²² That means the federal shares of total education spending in China and in the United States are rather limited—11.3 percent and 9 percent, respectively, for 2006.^{23,24}

¹⁹ Ibid.

²⁰ Sam Dillon. "Education Standards Likely to See Toughening" *New York Times*. Late edition. National Desk. April 15, 2009. <http://www.proquest.com.mutex.gmu.edu/> (accessed May 9, 2009).

²¹ Hursh, David. "Exacerbating Inequality: The Failed Promise of the No Child Left behind." Routledge. *Race, Ethnicity and Education*, v10 n3. Pgs. 295-308. Sep 2007. Act

²² Schools are financed by State revenue and local property taxes in the U.S. and county, provincial and local governments in China. Sources: Census Bureau; and Ministry of Finance.

²³ Full Text: Report on China's central and local budgets for 2006. www.chinaview.cn 2007-03-18 16:42:32.

²⁴ The U.S. federal share of U.S. education spending reached 9 percent in 2006, up from 8 percent a year earlier. State and local governments split the remainder of the cost. State governments contributed 47 percent—the largest share of public school funding to public school systems—while local sources paid 44 percent.

Source: Census Bureau, news release, April 1, 2008. Available at <http://www.census.gov/Press-Release/www/releases/archives/education/011747.html>

Table 3. Govt. Expenditure as a Percent of GDP

	1990	1995	1999	2003	2004	2005	2007	2010 (goal)
China	2.3	2.5	1.9	3.41	#N/A	#N/A	3.3	4
U.S.	#N/A	#N/A	#N/A	5.9	5.6	5.3	#N/A	#N/A

Source: UNESCO, World Bank, South China Morning Post & *Paying for Progress in China*, edited by Shue & Wong

Chinese leaders are trying to increase the country's overall spending on education to 4 percent of its GDP. Having once been criticized for devoting less to education than other developing economies—2.1 percent of GDP as compared to the average of 3.9 percent for developing countries, Chinese leaders have been gradually increasing the proportionate spending.²⁵ (See Table 3.)

In both countries, the federal governments have been increasing expenditures on education.²⁶ (See Chart 1 and Table 4.) Furthermore, both have increased the share of total spending devoted to education.²⁷ (See Table 5.) Coincidentally, the global economic crisis prompted both countries to passed fiscal stimulus measures, which funnel sums worth billions of U.S. dollars to schools.²⁸

In the United States, the limited federal role in financing education corresponds with a limited federal role in writing education policy. But in China, there is a dichotomy

²⁵ Rachel Murphy, "Paying for education in rural China," in *Paying for Progress in China*, ed. Vivienne Shue and Christine Wong. (Routledge, 2007). Pg. 69.

²⁶ According to one estimate, the central government share of education in China was limited to 2 percent of total spending, while township governments covered 78 percent, county governments covered 9 percent, and the provincial governments paid 11 percent.

Source: Sun Xiaol. "The effects of fiscal decentralisation on compulsory education in China: For better or worse?" JOAAG, Vol. 2. No. 1 JOAAG, Vol. 2. No. 1 JOAAG, Vol. 2. No. 1. 2007.

²⁷ Human Development Index. 2008. See hdr.undp.org

²⁸ Grace Ng. "More stimulus measures possible; But Beijing will first monitor impact of existing package." The Straits Times (Singapore). March 7, 2009. And "A Spending Education: Obama stimulus bill would spend \$142 billion on Milwaukee Schools that don't." Wall Street Journal. February 7, 2009.

Chart 1. Central/Federal Govt. Spending (in billions)

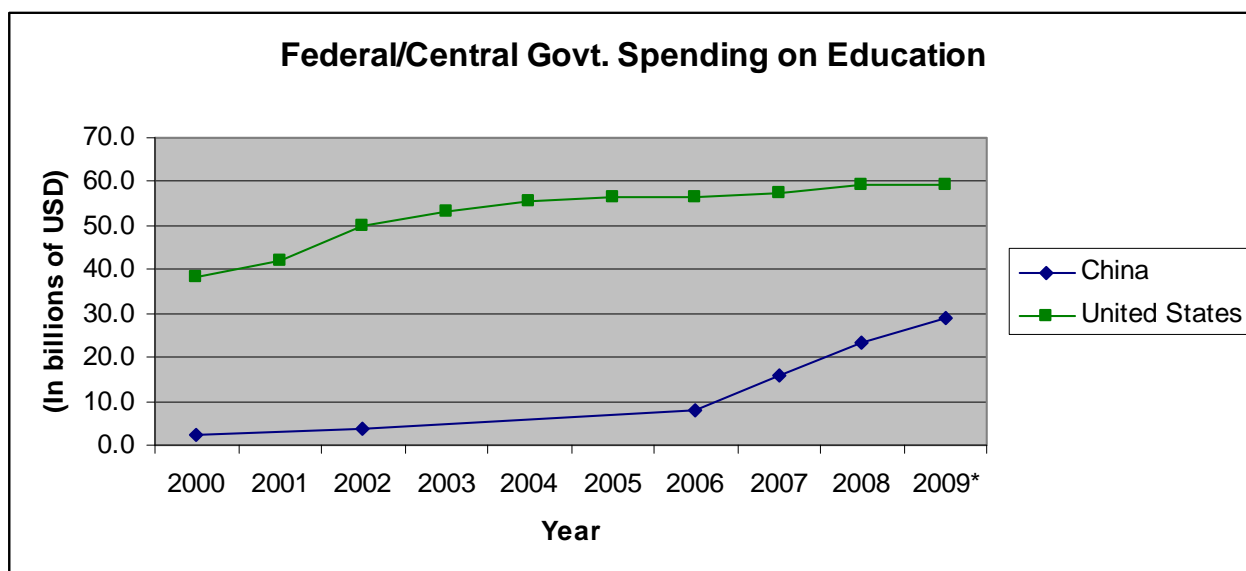


Table 4. Central/Federal Govt. Spending (in billions)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009*
China (in yuan)	¥16.5 b	#N/A	¥25.1 billion	#N/A	#N/A	#N/A	¥53.6 b	¥107.6 b	¥159.9 b	¥198 b
(In USD)	\$2.4 b	#N/A	\$3.7 billion	#N/A	#N/A	#N/A	\$7.9 b	\$15.8 b	\$23.4 b	\$29 b
United States	\$38.4 b	\$42.2 b	\$49.9 billion	\$53.1 b	\$55.6 b	\$56.6 b	\$56.6 b	\$57.5 b	\$59.2 b	\$59.2 b

*projected

Sources: U.S. figures are from U.S. Dept. of Education, budget history tables.

China's figures are collected from the National People's Congress (Full text of reports on China's central, local budgets submitted to NPC, 2000, 2002, 2006, 2007, 2008, 2009; Text of reports in English by official Chinese news agency Xinhua)

Table 5. Education Expenditure as a Percent of Total Govt. Spending

	1991	2002-2005
China	12.3%	15.3%
U.S.	12.7%	13.0%

Source: Human Development Index 2008

between control and finance. Though Chinese law gives the central government full control over policymaking, its fiscal system is based on a revenue-sharing method between the central and local governments. According to China's Ministry of Finance, local governments are responsible for financing economic and social development in their regions while the central government is responsible for expenditures for national defense, foreign affairs, national agencies, macroeconomic economic development and regional restructuring.²⁹

Systemic Inequities

Due to the uneven financing, neither China nor the United States provides adequate and equitable access to public schools. In both cases, inequities reflect broader socioeconomic disparities.³⁰

In China, the fault line falls along geographical lines. Urban schools along the East Coast and in the Eastern Inland areas generally provide higher quality services to students while rural schools, particularly in the Central and Western regions, struggle just to provide basic services.³¹ As a result, many schools raise needed revenue by charging students tuition or fees for books, food, uniforms and housing.³² These fees force rural families to devote as much as a quarter of their annual income for education.³³ However, some suggest that the current situation is better than it was during the 1990s, when

²⁹ Ministry of Finance description of China's fiscal system: <http://159.226.208.3/english/english.htm>

³⁰ Multiple sources.

³¹ C. Fred Bergsten, Bates Gill, Nicholas R. Lardy and Derek Mitchell, *China: The Balance Sheet: What the World Needs to Know Now About the Emerging Superpower*. Center for Strategic and International Studies, and the Institute for International Economics. 2006. pg. 50

³² Ibid. (China balance sheet.) pg. 50-51.

³³ "China pledges elimination of rural compulsory education charges in two years." Xinhua General News Service. March 5, 2006.

Note: "Recent surveys conducted by sociologists in several rural areas show that currently the Chinese farmers, whose annual per capita net income stood at a mere 3,200 yuan (400 dollars) in 2005, have to pay about 800 yuan (100 dollars) a year for a child's education in the elementary and secondary stage."

educational expenses were especially high for families due to the government's decrease in spending.^{34 35}

What is strikingly clear is that the urban-rural divide in China's educational system mirrors the country's economic gap between urban industrial- and service-based workers and rural agrarian workers. Best-selling author Ted Fishman described the situation as a longstanding pattern stemming from central government public policies. He likens the historic pattern to South African apartheid, American Jim Crow laws, and European exploitation of minorities in ghettos.³⁶

In a similar vein, the U.S. system of relying on local property taxes to finance schools produces an uneven funding pattern, which solidifies existing geographic income disparities.³⁷ Though public schools in the United States do not charge tuition, the quality of teaching and service varies greatly from district to district and from state to state.³⁸ The sharpest gaps lie between suburban and urban schools and between white and ethnic students.³⁹

Both countries are trying to address systemic inequities. With the 2001 passage of NCLB, U.S. politicians introduced a range of reforms meant to close the achievement gap

³⁴ Note: Revenue from school fees on families rose from 2.3 percent to 12.5 percent of total revenue, while the government's share of total education spending fell from 64.6 percent in 1990 to 53.1 percent in 1998. Source: Zhang, Xiaobo and Kanbur, Ravi, "Spatial Inequality in Education and Health Care in China" *China Economic Review*, 2005. pg. 6-7

³⁵ Note: According to another estimate, fees accounted for 10 to 20 percent of school revenue in the mid-1990s.

Source: Zhu Kaixuan, minister in charge of the State Education Commission. Source: New China news agency, Beijing, in English 1313 gmt 14 Mar 95. Text of report by Xinhua news agency. Beijing, 14th March 14, 1995.

³⁶ Ted Fishman. *China Inc How the Rise of the Next Superpower challenges America and the World*. 2005.

³⁷ Christopher, Neil. "People Before Profits: Property taxes fund education inequity." *People's Weekly World*, July 1, 2000, National Edition, <http://www.proquest.com.mutex.gmu.edu/> (accessed May 9, 2009).

³⁸ "The law and its influence on public school districts." Center for Public Information. April 5, 2006. http://www.centerforpubliceducation.org/site/c.kjJXJ5MPIwE/b.1537265/k.C55/The_law_and_its_influence_on_public_school_districts_An_overview.htm

³⁹ Pauline Lipman. "High Stakes Education: Inequality, Globalization, and Urban School Reform." RoutledgeFalmer. 2003.

between white and minority students. While the effect of that law is debatable, some studies suggest that the achievement gap is narrowing as educational outcomes improve for all races of students.⁴⁰ Other studies indicate that persistent problems of parity remain within the U.S. education system. For example, a 2009 report published by the Educational Testing Service said minority and low-income students are less likely than their white peers to be taught by teachers certified in the subjects they teach.⁴¹

As for China, government officials emphasize their efforts over the past two decades to address educational inequalities. The 1986 Compulsory Education Law mandated that all children would be required to attend nine years of schooling beginning at age 7.⁴² This schooling was to be free of tuition charges and fees for all children.⁴³ The law was “compulsory” in that all local governments would be responsible for (1) providing education services to all school-age children and adolescents; and for (2) admonishing or criticizing parents and guardians who do not send their children to school.⁴⁴

The law produced positive results. The nationwide dropout rate fell from a high of 13.16 percent in 1990 to 2.68 percent in 2000, and the average number of years children spent in school increased from 6.25 years to 7.6 years.⁴⁵ The law also had a

⁴⁰ According to the National Assessment of Educational Progress—the Nation’s Report Card—the average reading scores in 2008 for “9-year-old White, Black, and Hispanic students were higher than their scores in all previous assessments. White students at age 9 scored 14 points higher in 2008 than in 1971, while Black students scored 34 points higher, and the score for Hispanic students was 25 points higher than in 1975.” http://nationsreportcard.gov/ltr_2008/ltr0005.asp

⁴¹ Paul E. Barton and Richard J. Coley. “Parsing the Achievement Gap II.” Educational Testing Service. April 2009.

⁴² Note: The original plan was to have students begin at age 6, but it later changed to age 7.

Source: Ministry of Education description of national laws.

http://教育部.cn/edoas/website18/en/basic_b.htm

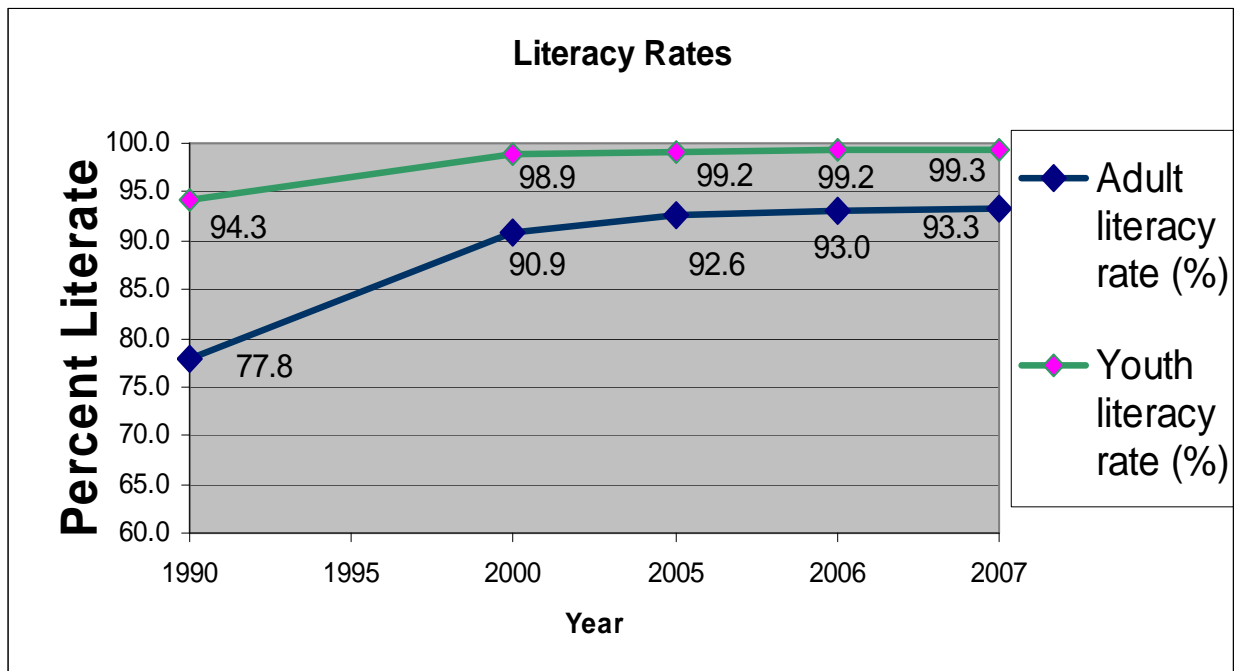
⁴³ 1986 Compulsory Education Law, description. <http://www.edu.cn/20050114/3126820.shtml>

⁴⁴ Ibid. Article 15.

⁴⁵ “Country Gender Assessment: People’s Republic of China.” East Asia Department and Regional and Sustainable Development Department. Asian Development Bank. December 2006. Pg. 27

tangible impact on learning outcomes. Specifically, the youth literacy rate increased to 99.3 in 2007 from 94.3 percent in 2000 while the adult literacy rate jumped to 93.3 percent from 77.8 percent in the same period. (See Chart 2.) The high literacy rate in comparison to other developing countries gave China a “crucial advantage in attracting foreign investment in manufacturing.”⁴⁶

Chart 2. Literacy Rates in China



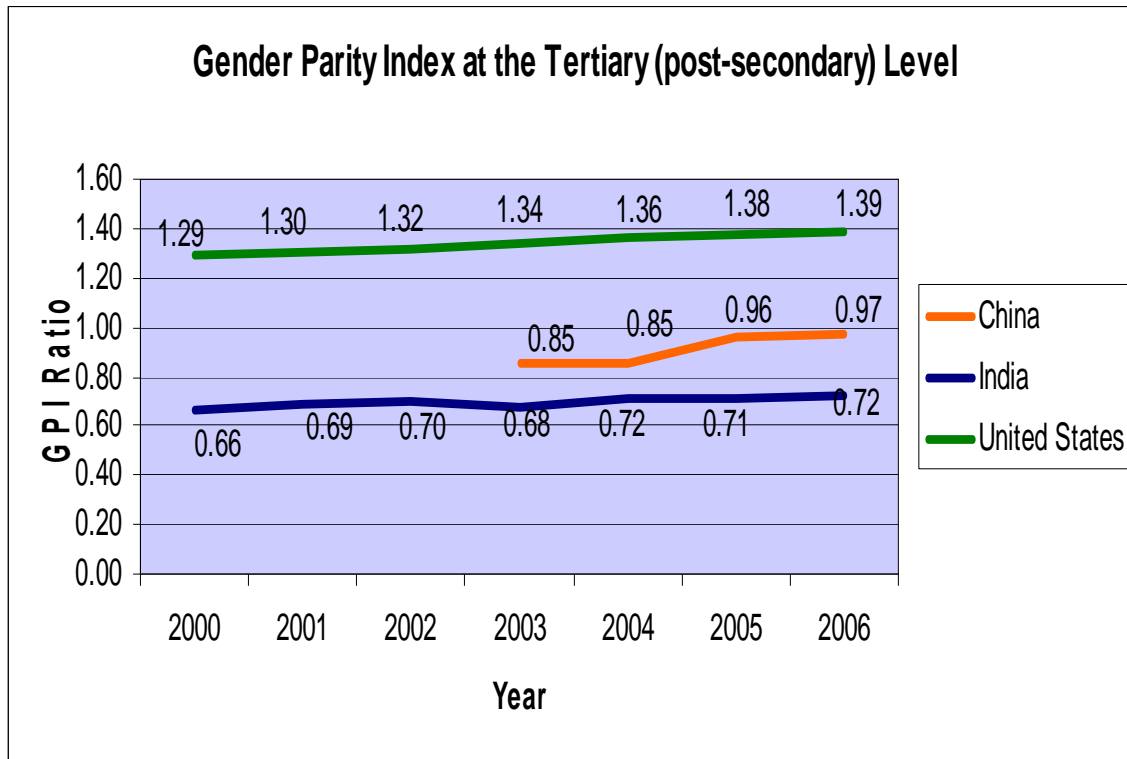
China has also made significant advances in providing services on an equitable basis to males and females. China’s gender parity index (GPI) for primary and secondary education in 2006 was 0.999—a near perfect GPI score.⁴⁷ That compares with a U.S. GPI score of 1.001. Looking at the index for post-secondary schooling, it becomes clear

⁴⁶ Ibid. (*China: The Balance Sheet*.)

⁴⁷ UNESCO. Data pulled April 20, 2009.

that China provides services on a more gender-equal basis than in the United States, where males are less likely than females to enroll in tertiary schools.⁴⁸ (See Chart 3.)

Chart 3. Gender Parity (post-secondary)



Source: UNESCO

In spite of these improvements, China's 1986 law fell short of its promise to provide free education. Many rural schools still lacked the necessary public funding to operate without charging fees.⁴⁹ Where illiteracy remained, it remained in the less-developed western and central regions.⁵⁰ Moreover, in addition to the lack of resources,

⁴⁸ Ibid.

⁴⁹ Ibid. (Fishman, Xiaol, etc.)

⁵⁰ Ibid. (China Balance Sheet) Pg. 50

rural schools tended to have a higher student-teacher ratio and poorer quality of teachers than urban schools.⁵¹

By the mid-2000s, the central government started prioritizing equity in education for the first time in the country's modern history.⁵² While China's previous five-year national plans had focused on the objective of "building a well-off society," the 11th Five-Year plan emphasized the pursuit of a harmonious society that invests in its people.⁵³ The new emphasis stemmed from leaders' concerns that rapid development would lead to disparities between rich and poor citizens, East and West regions, and urban and rural communities.⁵⁴ Leaders hoped to spread development gain, in part, by investing more central funds in rural education.⁵⁵

Growing Federal Roles

Following the Chinese government's 2005 announcement of its 11th Five-Year Plan, Chinese Premier Wen Jiabao pledged to completely eliminate school fees and tuition charges in rural communities.

In his 2006 report on governmental spending to the National People's Congress, Wen said the central government provided subsidies to the Western region to support compulsory education and to repair and rebuild school buildings.⁵⁶ Furthermore, he added that the central and local governments would increase spending to reduce the

⁵¹ Ibid. (Wang Dewen) pgs. 6-10

⁵² "Mid-term Evaluation of China's 11-th Year Plan." World Bank. Poverty Reduction and Economic Management Unit. East Asia and Pacific Region. 2008. Pg. 105. See http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2009/03/10/000334955_20090310064851/Rendered/PDF/476960ESW0Whit1Plan1main0report0eng.pdf

⁵³ "The New Five Year Plan." China Internet Information Center. Nov. 9, 2005. <http://china.org.cn/english/2005/Nov/148177.htm>

⁵⁴ Ibid.

⁵⁵ "Key Points of the 11th Five-Year Plan." China Internet Information Center. March 7, 2006. http://www.china.org.cn/2006lh/2006-03/07/content_1160403.htm

⁵⁶ "Report On The Implementation Of The Central And Local Budgets for 2006 And On The Draft Central And Local Budgets For 2007." Fifth Session of the Tenth National People's Congress. March 5, 2007. Ministry of Finance. http://news.xinhuanet.com/english/2007-03/18/content_5863162.htm

annual financial burden of education by 140 yuan per student and on junior middle school students by 180 yuan.⁵⁷ Overall government spending on education increased for 2006 by 19.6 percent over the previous year while central government spending increased by 41.7 percent over the previous year.⁵⁸

Wen said the new mechanism for incorporating rural compulsory education into the public finance system shows that China is making “profound changes” to its system of delivering public goods to rural areas.”⁵⁹

The official news reports of his announcement suggested the government reforms would have a significant impact on rural education. One report said the new financing method would guarantee that students in rural areas would have access to free, compulsory education, thus relieving as many as 150 million households from school fees and tuition.⁶⁰ The true impact of these reforms, however, remains to be seen due to the ongoing charges of school fees on rural families.⁶¹

Size and Scope

Perhaps China’s greatest challenge is serving such a large population with limited resources. According to UNESCO figures for 2008, China’s 1.3 billion inhabitants include more than 400 million school-aged youth. In effect, says Chen Xiaoya, China’s vice minister for Basic Education at the Chinese Ministry of Education, China educates “20 percent of the world’s students with only 2 percent of the world’s educational

⁵⁷ Ibid.

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ “China spends more on rural education.” Xinhua. Source: China Daily/ BBC Monitoring Asia Pacific – Political. March 6, 2007.

⁶¹ Rachel Murphy, “Paying for education in rural China,” in *Paying for Progress in China*, ed. Vivienne Shue and Christine Wong. (Routledge, 2007). Pgs. 69-91.

resources.”⁶² Rural students make up most of the student population. Although estimates vary, they suggest that rural students account for somewhere between 67 percent to 80 percent of the school-age population.⁶³ By comparison, the U.S. school-aged population is just shy of 100 million.⁶⁴ (See Table 6)

The difference in size of the population might help explain the difference between the countries’ compulsory education requirements. The Chinese government requires nine years of primary and secondary education, while the U.S. government recommends 12 years of schooling. It is important to point out, however, that the actual difference in the number of years students attend primary and secondary school is not large. On average, Chinese students spend 10.09 years attending primary and secondary school, while U.S. students spend 11.51 years in school. (See Table 7.)

Table 6. School Age Population

	2008
China	
Primary school	93.6 million
Lower secondary	128.6 million
Tertiary school	112.6 million
Upper secondary	67.6 million
Total	402.4 million
United States	
Primary school	24.7 million
Lower secondary	13.0 million
Tertiary school	26.3 million
Upper secondary	13.3 million
Total	99.3 million

Source: UNESCO⁶⁵

⁶² Asia Society. “Math and Science Education in the Global Age: What the United States can learn from China.” Sept. 8, 2008.

⁶³ Sources: Ibid. (Wang Dewen) Pg. 9 And “China spends more on rural education.” Xinhua. Source: China Daily/ BBC Monitoring Asia Pacific – Political. March 6, 2007.

⁶⁴ UNESCO statistics, data retrieved on April 16, 2009

⁶⁵ UNESCO. Data pulled April 20, 2009.

The reason for the small difference is that U.S. high schools have a dropout rate that hovers near 10 percent.⁶⁶ Although that number has decreased over time, minority students are far more likely than white students to drop out of school.⁶⁷

What is also significant from a comparative perspective is that the average number of years in school increased for Chinese students but decreased for U.S. students. When one includes tertiary schooling, however, the averages for both countries increased. (See Table 7)

Table 6. School-life expectancy: Primary to Secondary

Average # of Years Student Spend in Primary & Secondary School (in actual years)

Year	2000	2001	2002	2003	2004	2005	2006
China	#N/A	9.71	9.77	9.92	#N/A	#N/A	10.09
India	7.88	7.86	8.00	8.56	9.07	9.33	9.39
United States	11.66	11.72	11.54	11.61	11.55	11.54	11.51

Source: UNESCO

Table 7. School-life expectancy, total (including tertiary)

Average # of Years Student Spend including tertiary (in actual years)

Year	2000	2001	2002	2003	2004	2005	2006
China	#N/A	10.25	10.44	10.73	#N/A	#N/A	11.19
India	8.38	8.38	8.55	9.13	9.57	9.90	10.01
United States	15.37	15.54	15.60	15.75	15.73	15.76	15.73

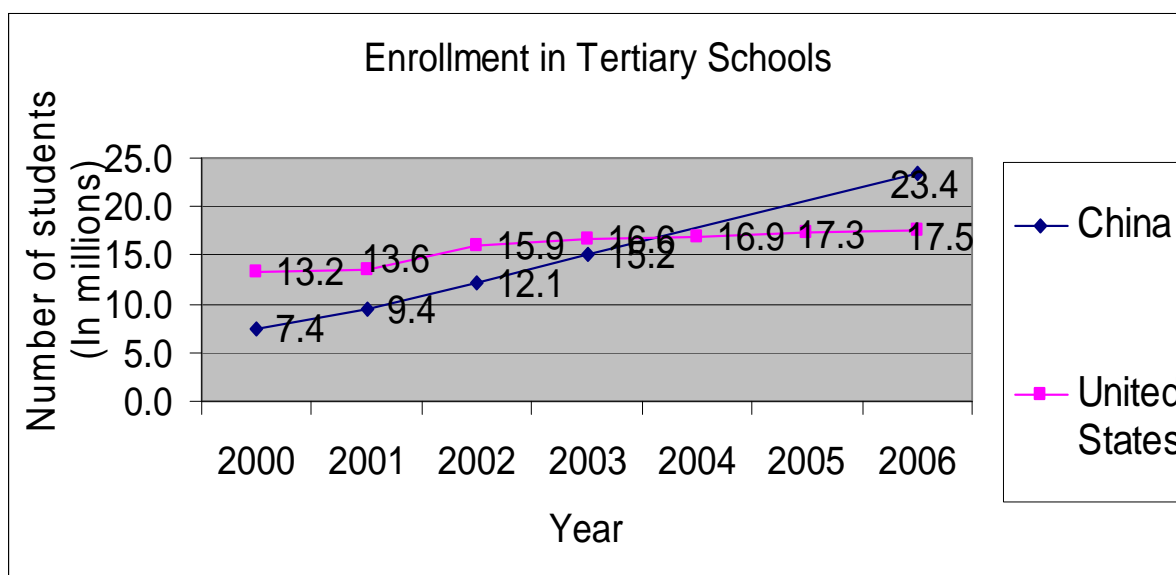
Source: UNESCO

⁶⁶ "Fast Facts." National Center for Education Statistics. <http://nces.ed.gov/FastFacts/display.asp?id=16>

⁶⁷ Note: The high school dropout rates for whites, blacks and Hispanics in 2006 was 5.8 percent, 10.7 percent, and 22.1 percent, respectively.

The increase in tertiary schooling reflects the fact that education is viewed in both countries and around the world as an essential tool for preparing workforces for higher-paying and higher-valued jobs.⁶⁸ By 2004, China eclipsed the United States as the country that enrolls and graduates the highest number of tertiary students.⁶⁹ (See Chart 4 and Table 9.) The fact that many of those graduates majored in science and engineering caused a major stir among U.S. researchers, whom view those fields as being essential to future economic growth.⁷⁰

Chart 4. Enrollment in Post-secondary Schools (in millions)



Source: UNESCO

Table 9. Tertiary Graduates (in millions)

Year	2000	2001	2002	2003	2004	2005	2006
China	1.7	1.8	1.9	-	-	-	5.6
United States	2.1	2.1	2.2	2.3	2.4	2.5	2.6

Source: UNESCO

⁶⁸ “China Education and Training Industry Report.” ResearchinChina. 2008 See www.prlog.org/10126669-china-education-and-training-industry-report-2008-updated-version.pdf

⁶⁹ UNESCO. Data pulled April 20, 2009.

⁷⁰ Note: It was reported in 2005 that China’s universities graduated three times as many engineers than did U.S. universities.

Source: “Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future.” National Academies Press. Committee on Science, Engineering, and Public Policy. 2007.

Incidentally, private schools make up more than a tenth of China's tertiary school market as well as a significant portion of other levels of schooling.⁷¹ (See Table 10.) It is worth mentioning, although beyond the scope of this paper, that private schools in both countries are testing grounds for new innovations in education. Further examination of this point is needed to determine how private educators are facilitating the policy goal of investing in human capital.

Table 10. Percent of students in each level attending private schools

	<u>China</u>	<u>U.S.</u>
<u>Lower secondary, General programmes</u>	<u>6</u>	<u>8.4</u>
<u>Lower secondary, Technical/vocational programs</u>	<u>3.5</u>	<u>#N/A</u>
<u>Pre-primary</u>	<u>30.7</u>	<u>36.6</u>
<u>Primary</u>	<u>3.6</u>	<u>9.8</u>
<u>Secondary</u>	<u>7.5</u>	<u>8.2</u>
<u>Upper secondary, General programs</u>	<u>9.4</u>	<u>8</u>
<u>Upper secondary, Technical/vocational programs</u>	<u>10.5</u>	<u>#N/A</u>

Source: UNESCO

Conclusion

In conclusion, it appears that the U.S. and Chinese school systems have more in common than meets the eye. It is interesting that the federal governments of both countries are stepping up efforts to invest in schools and expanding their authority to determine what educational outcomes their countries need. This subject could be further examined to illustrate how countries' top leaders are incorporating education into their

⁷¹ UNESCO. Data pulled April 20, 2009.

economic development plans. Further research could also explore ways schools are preparing students for the knowledge-based economy.

Still no discussion about policy goals is complete until one can assess the outcomes of those goals. Unfortunately, it is difficult to compare the educational outcomes between Chinese and U.S. schools because Mainland China does not participate in the two primary international tests measuring student knowledge—the Programme for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS).⁷² It would be helpful to have statistical data from the PISA and TIMSS in assessing the relative strengths of the educational systems. This would facilitate research on science and mathematical teaching methods—an area of particular interest for policymakers in both countries.

It is clear that U.S. and Chinese education leaders could learn from each other's experiences, especially in regards to financing education and in establishing policy goals that meet 21st Century workforce needs.

⁷² Note: Hong Kong and Macao participate in the PISA, and Hong Kong participates in the TIMSS. <http://nces.ed.gov/timss/countries.asp>

Bibliography

- Constitution of the People's Republic of China. Article 19.
<http://english.peopledaily.com.cn/constitution/constitution.html>
- Constitution of the U.S.A. <http://www.usconstitution.net/const.html>
- Compton, Robert A. "Two Million Minutes." <http://www.2mminutes.com/>
- David, Hursh. "Exacerbating Inequality: The Failed Promise of the No Child Left behind." Routledge. *Race, Ethnicity and Education*, v10 n3. Pgs. 295-308. Sep 2007.
- Dewen, Wang. "China's Rural Compulsory Education: Current Situation, Problems and Policy Alternatives." Working Paper Series No. 36. Institute of Population and Labor Economics, CASS. 2003. <http://iple.cass.cn/file/36.pdf>
- Dillon, Sam. "Education Standards Likely to See Toughening" *New York Times*. Late edition. National Desk. April 15, 2009. <http://www.proquest.com.mutex.gmu.edu/> (accessed May 9, 2009).
- Friedman, Thomas. *The World is Flat: A Brief History of the 21st Century*. Farrar, Straus and Giroux. April 2005.
- Greenspan, Alan. *The Age of Turbulence: Adventures in a New World*. The Penguin Press. 2007. Pgs.392-408.
- Khadaroo, Stacy Teicher. "High-schoolers have made little progress since the 1970s, study says." *The Christian Science Monitor*, April 28, 2009, <http://www.proquest.com.mutex.gmu.edu/> (accessed May 9, 2009).
- "Math and Science in a Global Age: What the U.S. Can Learn from China." Asia Society. 2006.
- Mathews, Jay. "Grade change: Students abroad, it turns out, are not outperforming Americans." *Boston Globe*. Ideas section. October 26, 2008. http://www.boston.com/bostonglobe/ideas/articles/2008/10/26/grade_change/
- Mohr, Patti. "Senator revives push for national math and science ed standards," *Education Daily*. January 10, 2007.
- "Achieve Report Shows States Taking Lead on Developing Rigorous Standards." *The Hispanic Outlook in Higher Education*, Sept. 22, 2008. <http://www.proquest.com.mutex.gmu.edu/> (accessed May 9, 2009).
- Jo Ellen Roseman, Mary Koppal. "Using National Standards to Improve K-8 Science Curriculum Materials." *The Elementary School Journal* 109, no. 2 (November 1, 2008): 123. <http://www.proquest.com.mutex.gmu.edu/> (accessed May 9, 2009).
- Human Development Index. 2008. See hdr.undp.org
- Murphy, Rachel. "Paying for education in rural China," in *Paying for Progress in China*, ed. Vivienne Shue and Christine Wong. (Routledge, 2007). Pg. 69.

U.S. Census Bureau. April 1, 2008. Available at <http://www.census.gov/Press-Release/www/releases/archives/education/011747.html>

PRC Ministry of Finance.

Report on China's central and local budgets for 2006. www.chinaview.cn 2007-03-18

Sun Xiaol. "The effects of fiscal decentralisation on compulsory education in China: For better or worse?" JOAAG, Vol. 2. No. 1 JOAAG, Vol. 2. No. 1 JOAAG, Vol. 2. No. 1. 2007.

Grace Ng. "More stimulus measures possible; But Beijing will first monitor impact of existing package."

The Straits Times (Singapore). March 7, 2009. And "A Spending Education: Obama stimulus bill would spend \$142 billion on Milwaukee Schools that don't." Wall Street Journal. February 7, 2009.

Ministry of Finance, PRC. <http://159.226.208.3/english/english.htm>

C. Fred Bergsten, Bates Gill, Nicholas R. Lardy and Derek Mitchell, *China: The Balance Sheet: What the World Needs to Know Now About the Emerging Superpower*. Center for Strategic and International Studies, and the Institute for International Economics. 2006. pg. 50

"China pledges elimination of rural compulsory education charges in two years." Xinhua General News Service. March 5, 2006.

Zhang, Xiaobo and Kanbur, Ravi, "Spatial Inequality in Education and Health Care in China" *China Economic Review*, 2005. pg. 6-7

Zhu Kaixuan, minister in charge of the State Education Commission. Source: New China news agency, Beijing, in English 1313 gmt 14 Mar 95. Text of report by Xinhua news agency. Beijing, 14th March 14, 1995.

Fishman, Ted. *China Inc How the Rise of the Next Superpower challenges America and the World*. 2005.

Christopher, Neil. "People Before Profits: Property taxes fund education inequity." *People's Weekly World*, July 1, 2000, National Edition.
<http://www.proquest.com.mutex.gmu.edu/> (accessed May 9, 2009).

"The law and its influence on public school districts." Center for Public Information. April 5, 2006.

Lipman, Pauline. "High Stakes Education: Inequality, Globalization, and Urban School Reform." RoutledgeFalmer. 2003.

National Assessment of Educational Progress. http://nationsreportcard.gov/ltt_2008/ltt0005.asp

Paul E. Barton and Richard J. Coley. "Parsing the Achievement Gap II." Educational Testing Service. April 2009.

Ministry of Education, PRC. http://教育部.cn/edoas/website18/en/basic_b.htm
and <http://www.edu.cn/20050114/3126820.shtml>

“Country Gender Assessment: People’s Republic of China.” East Asia Department and Regional and Sustainable Development Department. Asian Development Bank. December 2006.

“Mid-term Evaluation of China’s 11-th Year Plan.” World Bank. Poverty Reduction and Economic Management Unit. East Asia and Pacific Region. 2008. Pg. 105. See http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2009/03/10/000334955_20090310064851/Rendered/PDF/476960ESW0Whit1Plan1main0report0eng.pdf

“The New Five Year Plan.” China Internet Information Center. Nov. 9, 2005.
<http://china.org.cn/english/2005/Nov/148177.htm>

“Key Points of the 11th Five-Year Plan.” China Internet Information Center. March 7, 2006.
http://www.china.org.cn/2006lh/2006-03/07/content_1160403.htm

“Report On The Implementation Of The Central And Local Budgets for 2006 And On The Draft Central And Local Budgets For 2007.” Fifth Session of the Tenth National People's Congress. March 5, 2007. Ministry of Finance. http://news.xinhuanet.com/english/2007-03/18/content_5863162.htm

“China spends more on rural education.” Xinhua. Source: China Daily/ BBC Monitoring Asia Pacific – Political. March 6, 2007.

Rachel Murphy, “Paying for education in rural China,” in *Paying for Progress in China*, ed. Vivienne Shue and Christine Wong. (Routledge, 2007). Pgs. 69-91.

“China spends more on rural education.” Xinhua. Source: China Daily/ BBC Monitoring Asia Pacific – Political. March 6, 2007.

“Fast Facts.” National Center for Education Statistics.
<http://nces.ed.gov/FastFacts/display.asp?id=16>

“China Education and Training Industry Report.” ResearchinChina. 2008.
www.prlog.org/10126669-china-education-and-training-industry-report-2008-updated-version.pdf

“Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future.” National Academies Press. Committee on Science, Engineering, and Public Policy. 2007.

UNESCO statistics, data retrieved on April 16, 2009
UNESCO. Data pulled April 20, 2009.

Weingarten, Randi. "The time has come to consider national standards." *American Teacher*, April 1, 2009. <http://www.proquest.com.mutex.gmu.edu/> (accessed May 9, 2009).

World Bank, World Development Indicators. (accessed May 2, 2009)

