

THE SURPRISING SUCCESS OF SHANGHAI STUDENTS

IN 2009 SHANGHAI PARTICIPATED for the first time in the Organization for Economic Co-operation and Development's (OECD) triennial Programme for International Student Assessment (PISA). PISA exams are administered to a random sample of 15-year-olds in participating jurisdictions in three subject matter areas: reading, mathematics, and science. Typically, nations, not municipalities, are represented in PISA. In 2009, however, Shanghai was among the 74 jurisdictions and in 2012 it was among the 65 jurisdictions participating in the assessment (Beijing and other Chinese provinces also participated in 2009 but only in an exploratory manner). Shanghai surprised the global education community by scoring at the top of the charts in reading, mathematics, and science in 2009 and then repeating that ranking in the 2012 results. Figure 1.1 shows that Shanghai's students' performance in all three tested areas is well above the OECD average student performance. In addition, Shanghai had the smallest percentage of students performing in the lowest levels of mathematics and the highest percentage of students performing at the highest levels of PISA exams. These results have left many people in the policy and school reform communities asking how Shanghai has managed to create a system that supports its students to perform so well on these measures of student achievement.

One typical response¹ to explaining Shanghai students' performance on PISA exams is that the Asian educational approach is based primarily on memorization, repetition, and exam preparation. Certainly, exam preparation helps a great deal and there is no doubt that students in Shanghai learn how to prepare for exams. However, the PISA tests are not directly linked to school curriculum. The tests are "designed to assess to what extent students at the end of compulsory education, can apply their knowledge to real-life situations and be equipped for full participation in society . . . The tests are a mixture of open-ended and multiple-choice

Figure 1.1 Snapshot of performance in mathematics, reading, and science

	Mathematics				Reading		Science	
	Mean score in PISA 2012	Share of low-achievers (Below Level 2)	Share of top-performers in mathematics (Level 5 or 6)	Annualised change	Mean score in PISA 2012	Annualised change	Mean score in PISA 2012	Annualised change
OECD average	494	23.1	12.6	-0.3	496	0.3	501	0.5
Shanghai-China	613	3.8	55.4	4.2	570	4.6	580	1.8
Singapore	573	8.3	40.0	3.8	542	5.4	551	3.3
Hong Kong-China	561	8.5	33.7	1.3	545	2.3	555	2.1
Chinese Taipei	560	12.8	37.2	1.7	523	4.5	523	-1.5
Korea	554	9.1	30.9	1.1	536	0.9	538	2.6
Macao-China	538	10.8	24.3	1.0	509	0.8	521	1.6
Japan	536	11.1	23.7	0.4	538	1.5	547	2.6
Liechtenstein	535	14.1	24.8	0.3	516	1.3	525	0.4
Switzerland	531	12.4	21.4	0.6	509	1.0	515	0.6
Netherlands	523	14.8	19.3	-1.6	511	-0.1	522	-0.5
Estonia	521	10.5	14.6	0.9	516	2.4	541	1.5
Finland	519	12.3	15.3	-2.8	524	-1.7	545	-3.0
Canada	518	13.8	16.4	-1.4	523	-0.9	525	-1.5
Poland	518	14.4	16.7	2.6	518	2.8	526	4.6
Belgium	515	18.9	19.4	-1.6	509	0.1	505	-0.8
Germany	514	17.7	17.5	1.4	508	1.8	524	1.4
Viet Nam	511	14.2	13.3	m	508	m	528	m
Austria	506	18.7	14.3	0.0	490	-0.2	506	-0.8
Australia	504	19.7	14.8	-2.2	512	-1.4	521	-0.9
Ireland	501	16.9	10.7	-0.6	523	-0.9	522	2.3
Slovenia	501	20.1	13.7	-0.6	481	-2.2	514	-0.8
Denmark	500	16.8	10.0	-1.8	496	0.1	498	0.4
New Zealand	500	22.6	15.0	-2.5	512	-1.1	516	-2.5
Czech Republic	499	21.0	12.9	-2.5	493	-0.5	508	-1.0
France	495	22.4	12.9	-1.5	505	0.0	499	0.6
United Kingdom	494	21.8	11.8	-0.3	499	0.7	514	-0.1
Iceland	493	21.5	11.2	-2.2	483	-1.3	478	-2.0
Latvia	491	19.9	8.0	0.5	489	1.9	502	2.0
Luxembourg	490	24.3	11.2	-0.3	488	0.7	491	0.9
Norway	489	22.3	9.4	-0.3	504	0.1	495	1.3
Portugal	487	24.9	10.6	2.8	488	1.6	489	2.5
Italy	485	24.7	9.9	2.7	490	0.5	494	3.0
Spain	484	23.6	8.0	0.1	488	-0.3	496	1.3
Russian Federation	482	24.0	7.8	1.1	475	1.1	486	1.0
Slovak Republic	482	27.5	11.0	-1.4	463	-0.1	471	-2.7
United States	481	25.8	8.8	0.3	498	-0.3	497	1.4

OECD, 2014, p. 5.

questions that are organised in groups based on a passage setting out a real-life situation” (OECD, n.d.). Based on the rigor and design of the test questions, rote memorization of school texts is not Shanghai’s secret to success. When interviewed about Shanghai’s performance on the 2009 PISA exams, Andreas Schleicher, the PISA program’s designer at OECD, summarized:

Shanghai’s education system is distinctive and superior—and not just globally, but also nationally. Hong Kong, Beijing, and ten Chinese provinces participated in the 2009 PISA, but their results reflected education systems that were still the same-old knowledge acquisition models, whereas Shanghai had progressed to equipping students with the ability to interpret and extrapolate information from text and apply it to real world situations—what we would normally refer to as “creativity.” Twenty-six percent of Shanghai 15-year-olds could demonstrate advanced problem-solving skills, whereas the OECD average is 3 percent.

(Jiang, 2011)

Many other factors seem to be at play within the overall Shanghai system, including the students' motivation toward strong performance, the parental support for education that is culturally engrained throughout the country, the focus that the teachers place on high expectations for students and the individual tutoring they provide (sometimes without additional pay and sometimes with a consulting fee) (Tan, 2013). These cultural values for education in general and the role of adults in supporting the younger generations toward their educational potential and success in life are well accepted as partially explaining the high performance of several Asian countries on international comparison exams (Cheng, 2014).

Beyond the cultural explanation that education is the “key to social mobility” for the individual who works hard, Cheng (2014) points out that the cultural value for education is represented also in the financial and policy investments in expanding and improving the educational systems serving vast populations of children. With this systems frame in mind, the question that follows from the Shanghai results is: How is the educational system—its culture, policies, and practices—set up to support the kind of student performance we see in the Shanghai results? In particular, how does the system structure teaching, and the role and quality of teachers, to contribute to these outcomes?

This Study

In the text that follows, I attempt to do two things in order to answer these questions. I describe the national geographic and economic context of China, the nation's policy reforms over time that built the modern Chinese educational system, and the educational practices that are considered typical in China. I give primary focus to policies and practices that contribute to the preparation, hiring, and ongoing professional support for teachers within the system based on the assumption that teachers are a key feature of the education system that contributes to student performance and achievement (this assumption is also explicitly stated within Chinese law).

I then delve into specific descriptions of how these national policies are translated, adapted, and enacted in Shanghai. The case of Shanghai allows us to see an illustration of an educational system that has been investing in educating a diverse student population for three decades and, by measures of international comparison tests, is achieving success. Certainly, Shanghai does not represent the educational practices and conditions in all corners of China. The limited local resources of the western villages create a very different educational context than the densely populated urban throng of Shanghai. Since the early part of

the 19th century Shanghai has been a center for international business, shifting over time from industry to finance. Yet, Shanghai is but one of several urban metropolises in China that is working toward educational improvement through experimentation with new curriculum and teaching practices. And Shanghai operates its educational system under the same national laws and within the same cultural traditions as the rest of China. As a large economic center that has a history of innovation and international exposure, I will treat Shanghai as a case of seeing the possibilities of what a developing nation can accomplish within its educational systems.

To construct this text, I drew on several sources of information. I summarize national laws and regulations of China retrieved from the national Ministry of Education website. I also draw on published refereed research, data from national surveys and reports, summaries of the educational context and policies in China and Shanghai published by organizations such as OECD, UNESCO, the Asia Society, and NCEE, and news accounts of policy launches and public reaction. Finally, I conducted field research in Shanghai for four weeks in November 2013. I was generously hosted by higher education colleagues at East China Normal University who made arrangements for me to visit schools and interview teachers, principals, education officials, and university professors and students in education. I also observed classrooms, teacher meetings, and a parent feedback session (Link 1-1).



As an education professor in the United States, I was well aware that I was entering new cultural territory as well as a political system that would be hard to interpret through my Western lived experience. I had some concept of schooling experience in China being driven by examinations, that classrooms had more students than I typically experienced in the US, and that teachers spent less time with children in their typical work week than US teachers. These characteristics are oft-repeated in Western conversations about Chinese education. I was not, however, prepared to understand how deeply the school structure of China influences the overall educational experience of children, or to appreciate the collective nature of teaching within schools, or to grasp the enormous challenges of managing a national school system that serves 200 million children. These elements of Chinese education are described in more detail in the text that follows.

NOTES

1. A discussion of claims that Shanghai excluded migrant children from rural provinces who live in the city from its public schools and from the PISA sample follows in later sections.