

Improving **education** in the Gulf

Educational reform should focus on outcomes, not inputs.

**Michael Barber, Mona Mourshed,
and Fenton Whelan**

Having largely achieved the once-distant goal of providing free access to primary and secondary education for all nationals, the Gulf Cooperation Council (GCC) states—Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE)—now face a much thornier challenge: raising the quality of that education. To make further progress, they must shift their focus—above all, to improving the skills of teachers and managing the overall performance of their school systems. Some GCC states (notably Bahrain, Qatar, and the UAE) are making a start.

The economic and demographic profiles of the GCC states vary significantly. Nonetheless, their public-education systems have evolved along similar paths, focusing for decades on increasing the number of teachers and making effective investments in “hard” infrastructure—schools and, more recently, computers—in hopes of improving their students’ performance. But poor showings on the most recent global standardized math and science tests, the Trends in International Mathematics and Science Study (TIMSS),¹ served as a wake-up call for GCC policy makers (Exhibit 1, on the next spread). The national assessments that followed have only confirmed those results.

¹ TIMSS is an international examination conducted every four years. In the most recent exam cycle, in 2003, the two participating GCC countries, Bahrain and Saudi Arabia, ranked among the lowest performers. (Of 45 countries, Bahrain was 33rd in science and 37th in math, Saudi Arabia 39th and 43rd, respectively.) National assessments in other GCC countries indicate that their students’ performance is similar.

Article at a glance

Educational reform in the Gulf Cooperation Council (GCC) states will increase the well-being of their citizens and help them to develop a globally competitive workforce.

Reform efforts must improve the quality of instruction in public schools by enabling them to attract higher-caliber teaching recruits and by strengthening teacher-training programs.

They must also create performance-management systems to ensure that students acquire the right knowledge and skills, teachers perform well, and schools are managed properly.

In partnership with leading educational organizations around the world, GCC policy makers have started to implement programs that could make the GCC states a unique laboratory for educational innovation.

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Recognizing the importance of public education as both a foundation for economic growth and a necessity for the well-being of the GCC's citizens, policy makers are raising their sights. The longer-term aim is to develop a globally competitive workforce.

To achieve these goals, GCC policy makers must unwind many years of emphasizing the constituent parts of the system rather than the performance of its students—in other words, they must stop emphasizing inputs over outputs. For starters, they need to change their focus from the number of teachers to the quality of teaching. That shift calls for improving both the caliber of the students who enter the profession and the training they receive. In addition, leaders need to create a robust performance-management system, which in some

cases will mean establishing bodies separate from national education ministries, in order to regulate standards and assessments.

Implementing these changes at a time when many GCC states are embarking on parallel efforts to improve regional universities and vocational schools is a major undertaking. Still, there is reason for hope. Many GCC educational systems are small enough to make reform less daunting than it would be in larger countries. The GCC's largest school system—Saudi Arabia's—serves 5,000,000 students, while the others range in size from 500,000 students in Oman to 90,000 students in Qatar.

But GCC policy makers are not going it alone. By studying the successes and failures of educational reforms elsewhere and by partnering with some of the world's leading educational institutions to apply those lessons, the region's leaders may create a unique laboratory for educational innovation.

Increasing the quality rather than the quantity of teachers

It's no secret that the quality of teaching is one of the most important determinants of the way students perform. In the words of an educational-

EXHIBIT I

Below-average performance

■ Participating Gulf Cooperation Council (GCC)¹ state

2003 TIMSS 8th-grade math achievement²

Rank	Country	Mean score	Rank	Country	Mean score
1	Singapore	605	24	Serbia	477
2	South Korea	589	25	Bulgaria	476
3	Hong Kong	586	26	Romania	475
4	Chinese Taipei	585		International average	467
5	Japan	570	27	Norway	461
6	Belgium (Flemish)	537	28	Moldova	460
7	Netherlands	536	29	Cyprus	459
8	Estonia	531	30	Macedonia	435
9	Hungary	529	31	Lebanon	433
10	Malaysia	508	32	Jordan	424
11	Latvia	508	33	Iran	411
12	Russia	508	34	Indonesia	411
13	Slovakia	508	35	Tunisia	410
14	Australia	505	36	Egypt	406
15	United States	504		37 Bahrain	401
16	Lithuania	502	38	Palestine	390
17	Sweden	499	39	Chile	387
18	Scotland	498	40	Morocco	387
19	Israel	496	41	Philippines	378
20	New Zealand	494	42	Botswana	366
21	Slovenia	493		43 Saudi Arabia	332
22	Italy	484	44	Ghana	276
23	Armenia	478	45	South Africa	264
				England ³	498

2003 TIMSS 8th-grade science achievement²

Rank	Country	Mean score	Rank	Country	Mean score
1	Singapore	578	24	Bulgaria	479
2	Chinese Taipei	571	25	Jordan	475
3	South Korea	558		International average	474
4	Hong Kong	556	26	Moldova	472
5	Estonia	552	27	Romania	470
6	Japan	552	28	Serbia	468
7	Hungary	543	29	Armenia	461
8	Netherlands	536	30	Iran	453
9	United States	527	31	Macedonia	449
10	Australia	527	32	Cyprus	441
11	Sweden	524		33 Bahrain	438
12	Slovenia	520	34	Palestine	435
13	New Zealand	520	35	Egypt	421
14	Lithuania	519	36	Indonesia	420
15	Slovakia	517	37	Chile	413
16	Belgium (Flemish)	516	38	Tunisia	404
17	Russia	514		39 Saudi Arabia	398
18	Latvia	512	40	Morocco	396
19	Scotland	512	41	Lebanon	393
20	Malaysia	510	42	Philippines	377
21	Norway	494	43	Botswana	365
22	Italy	491	44	Ghana	255
23	Israel	488	45	South Africa	244
				England ³	544

¹Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates.

²TIMSS = Trends in International Mathematics and Science Study, an international examination conducted every 4 years, most recently administered in 2003.

³Excluded from ranking because of sampling problems; England and Scotland participated separately in TIMSS in 2003.

Source: TIMSS

policy expert at Singapore’s National Institute of Education (NIE), that country’s sole provider of teacher education: “You can have the best curriculum, the best infrastructure, and the best policies, but if you don’t have good teachers then everything is lost.” Research supports this sentiment. A US study, for instance, showed that the performance of two students who were average (in the 50th percentile) at age 8 could diverge by as much as 54 percentile points by the time they reached age 11—a difference contingent solely on the caliber of their teachers.²

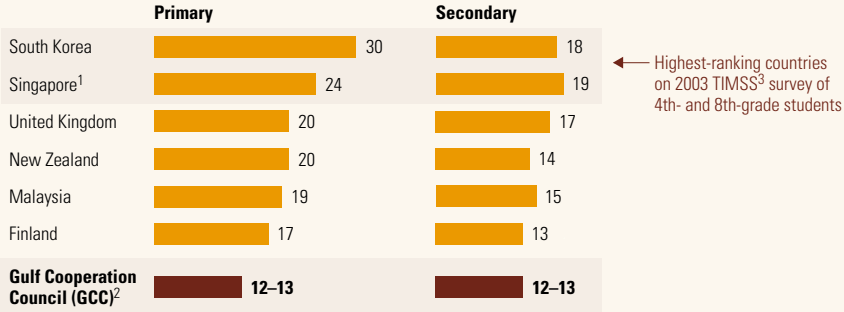
Yet most education systems in the GCC states concentrate on the number of teachers instead of the quality of teaching. Rather strikingly, the average student-teacher ratio in the GCC is 12:1—one of the world’s lowest—as compared with an average of 17:1 in the member countries of the

²The performance of an average student with a high-performing teacher (in the top 20 percent) is 52 to 54 percentile points higher than that of an average student with a low-performing teacher (in the bottom 20 percent). William L. Sanders and June C. Rivers, *Cumulative and Residual Effects of Teachers on Future Student Academic Achievement*, University of Tennessee Value-Added Research and Assessment Center, Knoxville, TN, 1996.

EXHIBIT 2

Lower student-teacher ratios

Number of students per teacher, 2003



¹Numbers for 2004-05.

²Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates.

³TIMSS = Trends in International Mathematics and Science Study, an international examination conducted every 4 years, most recently administered in 2003.

Source: National education statistics; Organisation for Economic Co-operation and Development (OECD)

Organisation for Economic Co-operation and Development (Exhibit 2). Unfortunately, international evidence suggests that low student-teacher ratios correlate poorly with strong student performance and are far less important than the quality of the teachers.³ Singapore, the top-scoring nation on TIMSS, has a student-teacher ratio of 24:1 in the primary grades. The United Kingdom has Europe’s highest student-teacher ratio, yet England ranks third for fourth-grade reading, after Sweden and the Netherlands.⁴

In a world of limited resources, the trade-off for any educational system is clear—either it maintains a large pool of teachers and invests less in training and compensating them or the reverse. Countries such as Singapore and South Korea, two of the top scorers in TIMSS and the Programme for International Student Assessment (PISA) exams,⁵ have chosen the latter model because it helps to attract higher-caliber teaching candidates and to give them more effective teaching skills.

To shift the emphasis from low student-teacher ratios, it will be necessary to understand why the present system emerged. Interviews with GCC

³Of 112 studies that examined the effect of class size on student achievement, only 9 found any positive correlation. Eighty-nine found no significant effect, and 14 found a negative one. Eric A. Hanushek, “The evidence on class size,” in Susan E. Mayer and Paul E. Peterson (eds.), *Earning and Learning: How Schools Matter*, Washington, DC: Brookings Institution Press, 1999; and Karen Akerhielm, “Does class size matter?” *Economics of Education Review*, September 1995, Volume 14, Number 3, pp. 229-41.

⁴Progress in International Reading Literacy Study (PIRLS), 2001.

⁵PISA tests the reading, science, math, and problem-solving skills of 15-year-olds and is conducted by the Organisation for Economic Co-operation and Development (OECD). More than forty countries participated in the 2003 assessment.

educational policy makers suggest one reason: student-teacher ratios are easier to measure and manage than the performance of teachers or administrators. Broader external pressures have perpetuated these low student-teacher ratios. States rich with petrodollars, for example, have historically relied on their ministries of education to absorb the excess national labor force—especially women, who for cultural reasons disproportionately find educational positions attractive—irrespective of actual classroom needs.

The continuing efforts to drive down student-teacher ratios have unintended consequences. Since low ratios require the GCC states to hire more teachers per capita than other nations do, those states are less selective about whom they employ as teachers. Given the same funding level, resources for compensating and training teachers are therefore stretched over a larger number of candidates. As a result, the quality of the candidates and of the coaching they receive is lower than it would otherwise be. As in most other countries, the top university students tend to enter higher-paying professions, such as medicine and engineering; moderate or low performers have few options besides teaching or the social sciences.

Focusing on the number of teachers has particularly harmful implications for boys in the GCC states. Government schools are segregated overwhelmingly by gender: boys are taught by men, girls by women. Since positions in education, including those of classroom teachers, are generally less attractive to men, there is a shortage of teachers for boys. As a result, boys' schools often employ lower-caliber teachers—and, sure enough, the GCC gender gap in student outcomes is among the most extreme in the world (Exhibit 3, on the next page). To counter this problem, some GCC states have begun allowing women to teach in boys' primary schools.

GCC policy makers increasingly realize that the heart of effective educational reform is to employ better—not necessarily more—teachers and to provide them with more effective and practical training, both initial and ongoing. As experience in Finland (the top scorer on PISA) and Singapore shows, best practices in these areas include the following components:

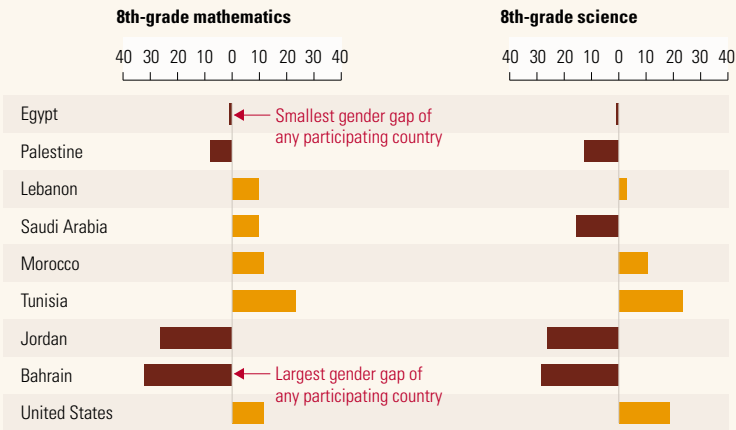
- *Attracting and admitting higher-caliber teaching candidates.* Introducing a more rigorous screening and selection process to evaluate candidates before they begin training as teachers will allow the GCC states to invest more resources in the best ones. In both Finland and Singapore, candidates for university teacher-training programs must pass a rigorous application process, including a curriculum vitae screen (in Singapore, only students in the top 30 percent of their class can apply), literacy and numeracy assessments, and interviews with experienced headmasters. Singapore's teacher acceptance rate of one

EXHIBIT 3

The gender gap

Gap (in absolute value) between boys' and girls' average scores on 2003 TIMSS examinations¹

- Girls perform best (girls' average score exceeds boys')
- Boys perform best (boys' average score exceeds girls')



¹TIMSS = Trends in International Mathematics and Science Study, an international examination conducted every 4 years, most recently administered in 2003.

Source: TIMSS; McKinsey analysis

in six illustrates how selective the process really is. This selectiveness may be self-reinforcing: low acceptance rates boost the prestige and therefore the desirability of the program. Across the GCC, in contrast, university teacher-training programs attract some of the least qualified secondary-school graduates—a trait of almost all underperforming educational systems.

Creating clear career tracks for teachers, with meaningful professional-development opportunities and more generous starting salaries, will also help to attract better candidates—both secondary-school graduates and current university students.

- *Improving education and training for candidates and teachers.* Policy makers should revamp the GCC’s university-level teacher-training programs to include more practical experience in schools. People who are actually teaching need programs that can be customized to individual requirements, as well as opportunities for continued education. Singapore, for example, gives every teacher 100 hours of training a year, and its teachers get individual feedback from the 2 to 3 percent of experienced, high-performing teachers who have been designated as peer coaches.

Some of the GCC states have already taken steps to boost the quality of teaching in their schools: for example, Abu Dhabi, the largest of the seven United Arab Emirates, has moved to improve the education of its teachers and principals by entering into a partnership with Singapore's NIE, one of the world's leading teacher education institutions. NIE has designed new programs to train teachers and headmasters, with programs conducted in both Abu Dhabi and Singapore. In September 2007 NIE's first campus outside Singapore will open in Abu Dhabi, which has also contracted with leading educational-training and -management companies to hire, train, and assign small teams to provide teachers with daily coaching and training.

Bahrain plans to establish a specialized college to train teachers and principals as part of a broader effort to make teaching an attractive profession. The aim of the college will be to raise the caliber of the initial education that teachers and principals receive and to provide teachers with ongoing training throughout their careers.

Installing robust performance management

Attracting and developing great teachers is only part of the answer. The GCC states also need transparent performance-management systems to ensure that students learn the right knowledge and skills, that teachers perform well, and that schools are properly managed.

Today both exams and school inspections push educational leaders to emphasize the wrong metrics—and to pursue the wrong goals. Many GCC national exams test students on factual information, but few exams include questions assessing the way they apply it. As a result, teachers and students in government schools tend to focus on memorization rather than on mastering problem solving and written and verbal communication—the skills most sought by the labor market and vital to building a sustainable economy.

Similarly, school inspections in the GCC scrutinize (and therefore reward) administrative performance rather than academic outcomes. A school managed by a principal who rigidly adheres to official policies gets full marks, even if the teaching is mediocre. A school run by a brilliant but less organized principal will be penalized, even if the quality of teaching is high.

The performance-management system has taken its current shape for two reasons. First, testing a knowledge of facts and judging adherence to official policies are easier than assessing more complex student outcomes and teaching skills (just as measuring student-teacher ratios is simpler than assessing the quality of teachers). Issues of governance also play a role. Historically, the GCC states have entrusted the policies, operations, and regulation of schools to a single body—the ministry of education. This creates a clear

conflict of interest: in the words of one New Zealand policy expert, “You can’t have the same people who are responsible for improvement be the ones who are judging whether or not that improvement has actually happened.” Indeed, the resulting lack of objectivity and transparency about the performance of schools and students can delay or misguide the authorities’ efforts to get failing schools on track.

GCC policy makers should adopt the performance-management solution that many of the world’s top educational performers embrace: separating the responsibilities for setting policy and monitoring outcomes from those of operating schools. While the education ministry would remain responsible for setting standards of learning for students, other institutions would measure achievement, in order to promote objectivity, transparency, and accountability. Hong Kong, New Zealand, Singapore, and the United Kingdom have all excelled in these areas:

- *Examining student performance.* The Singapore Examination and Assessment Board and the Hong Kong Examinations and Assessment Authority are responsible for designing, administering, and scoring nationwide examinations of students in selected grades to assess the competence of students in literacy, numeracy, and other subjects. Most high-performing countries not only administer their own examinations but also participate in international assessments to rank their students’ performance against that of students elsewhere and to provide an external check on their own quality assessments.

In the GCC states, the body that sets examinations should design and conduct nationwide exams in core subjects such as math and science for grades 6, 9, and 12. Although only Bahrain and Saudi Arabia took part in the 2003 TIMSS, Kuwait, Oman, and Qatar will join them in the upcoming 2007 exams; only the UAE will not be participating.

- *Assessing the performance of schools.* International examples of independent school inspectorates include New Zealand’s Education Review Office (ERO) and the United Kingdom’s Office for Standards in Education. In both countries inspectors visit each school for a few days every three or four years to assess the quality of outcomes (how much students are learning) and their main drivers (the quality of the curriculum, teaching, and school management). Schools receive detailed feedback on their strengths and weaknesses, and the inspectorates publish findings, helping to create public pressure for change. In some cases a negative inspection triggers immediate intervention by the authorities. These reports are extremely popular among parents; in New Zealand ERO operates one of the country’s ten most visited

Reform in Jordan

The GCC is paying close attention to the way one of its neighbors, Jordan, progresses with educational reform. At the 2003 World Economic Forum, King Abdullah announced the launch of the Jordan Education Initiative (JEI), an invitation to local and international bodies to collaborate on experimental education programs promoting “knowledge skills” at 100 public “discovery schools” in Amman. JEI has attracted more than 30 pro bono partners, both international (Cisco Systems and Microsoft)

and local (Menhaj and Rubicon). In one project, the Cisco Learning Institute and Rubicon revamped Jordan’s math curriculum to include a number of modules that use different techniques to reach students who learn in different ways—visually, aurally, through practical application and interaction, or through a combination of these approaches. Jordan’s Ministry of Education plans to roll out the most successful experiments across the country’s public-education system.

Web sites. GCC policy makers should establish similar inspection agencies to assess student performance, classroom instruction, and school management.

Of all the GCC countries, Qatar has moved furthest to reform its standards, exams, and inspections. In 2002 it formed a partnership with the Council for British Teachers (CfBT) to develop new curriculum standards, based on international benchmarks, for all Arabic-language schools. With the support of two prominent US test-development companies—Education Testing Services (creator of the SAT, GRE, and other exams) and CTB/McGraw-Hill (publisher of the California Achievement Tests, among others)—Qatar then developed new exams that form the basis of its performance-management system. Parents and the general public can access online “scorecards” showing each school’s examination and inspection results. Qatar’s school system now ranks among the most transparent in the world.

In addition to learning from best practices in Asia and Europe, the GCC states have been closely watching reform efforts in neighboring Jordan (see sidebar, “Reform in Jordan”).

Educational reform is a long-term endeavor in any country. Although the GCC states face many challenges, they will benefit from precedent. Reform efforts around the world have clarified which levers are—and, equally important, are not—critical in improving student outcomes. For GCC policy makers, the challenge is to recognize and apply these levers forcefully. **Q**

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