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Education for a New Era

Design and Implementation of K–12 Education Reform in Qatar

Dominic J. Brewer · Catherine H. Augustine · Gail L. Zellman · Gery Ryan
Charles A. Goldman · Cathleen Stasz · Louay Constant

Prepared for the Supreme Education Council

Approved for public release, distribution unlimited

RAND-QATAR POLICY INSTITUTE

The research described in this report was prepared for the Supreme Education Council and conducted within RAND Education and the RAND-Qatar Policy Institute, programs of the RAND Corporation.

Library of Congress Cataloging-in-Publication Data

Education for a new era : design and implementation of K–12 education reform in Qatar / Dominic J. Brewer ... [et al.].
p. cm.
Includes bibliographical references.
ISBN-13: 978-0-8330-4007-7 (pbk. : alk. paper)
1. Education—Qatar. 2. Education and state—Qatar. I. Brewer, Dominic J.

LA1435.E38 2006
370.95363—dc22

2006027019

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Published 2007 by the RAND Corporation
1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
1200 South Hayes Street, Arlington, VA 22202-5050
4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213-2665
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Preface

The leadership of the Arabian Gulf nation of Qatar sees education as the key to Qatar's economic and social progress. Long concerned that the country's education system was not producing high-quality outcomes and was rigid, outdated, and resistant to reform, the highly committed Qatari leadership approached the RAND Corporation in 2001, asking it to examine the kindergarten through grade 12 (K–12) education system in Qatar and to recommend options for building a world-class system consistent with other Qatari initiatives for social and political change, such as wider opportunities for women. After accepting a specific system-wide reform option, the leadership then asked RAND to further develop the option and support its implementation. This work, which proceeded for four years, provided RAND with the unique and exciting opportunity not only to observe a major reform undertaking from the ground level, but to participate in the process as well.

To make this work accessible to a wide audience, three related documents have been prepared:

- A monograph: *Education for a New Era: Design and Implementation of K–12 Education Reform in Qatar*. This document is available in English as RAND MG-548-QATAR.
- An executive summary: *Education for a New Era, Executive Summary: Design and Implementation of K–12 Education Reform in Qatar*. This document provides both an English and an Arabic version under one cover; it is available as RAND MG-548/1-QATAR.

- A research brief: *A New System for K–12 Education in Qatar*. This document is available in English as RAND RB-9248-QATAR and in Arabic as RAND RB-9248/1-QATAR.

All three of these documents are available in full-text versions on the RAND Web site: www.rand.org.

The monograph analytically describes, based on RAND's experiences in this effort, the first phase of Qatar's K–12 school reform initiative, called *Education for a New Era*. It follows the initiative from its inception in 2001 to the opening of the first generation of the new, Independent schools in Fall 2004; it also provides a brief update on developments after that date. However, this description cannot do justice to all the contributions of the many Qataris, Qatari organizations, and international consultants and contractors that took part in this very ambitious reform effort. In consequence, this document distills and summarizes the experiences of all these participants, with topics chosen primarily for a policy audience.

The material should be of particular interest to education policymakers, researchers, and scholars whose focus is on education policy and reform, system design, curriculum development, assessment, and implementation. It should also be of interest to those concerned with education, human capital, and social development in the Middle East. Again, it should be noted that it was not possible to convey all that occurred in the reform effort, nor to do full justice to all participants' efforts.

More detailed information about the reform can be found at Qatar's Supreme Education Council Web site: http://www.education.gov.qa (Arabic version, with a link to the English version). Further information about the RAND project supporting the reform initiative can be found at www.rand.org/education.

The RAND-Qatar Policy Institute (RQPI) is a partnership of the RAND Corporation and the Qatar Foundation for Education, Science, and Community Development. The aim of RQPI is to offer the RAND style of rigorous and objective analysis to clients in the greater Middle East. In serving clients in the Middle East, RQPI draws on the full professional resources of the RAND Corporation. For further

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Summary

The Arabian Gulf nation of Qatar is a small country with a small population, but its ambition to be a progressive leader in the industrial and social realms is anything but small. In addition to oil resources, Qatar has one of the largest reserves of natural gas on earth, and it has invested heavily in industries that allow it to exploit its natural gas reserves to bring great wealth to Qataris. At the same time, Qatar is developing socially. Women are expanding their role in society, and a new constitution provides extensive personal rights and moves the nation toward democratic institutions, including an elected parliament.

In the realm of education, Qatar, through the Qatar Foundation, has attracted branch campuses of some of the best universities in the world. But to support both its economic and its social development, Qatar needs much stronger results from its elementary and secondary education system, which is widely seen as rigid, outmoded, and resistant to reform.

Examining the Existing System

In 2001, the leaders of Qatar commissioned the RAND Corporation to examine the nation's K–12 education system and to recommend options for building a world-class system that would meet the country's changing needs. The highly committed Qatari leadership was willing to consider radical and innovative solutions, and it was offering RAND a unique and exciting opportunity to help design and build a new education system. This monograph documents the design of the new system

and the first two years of implementation, covering the period from June 2001 to September 2004.

The initial study took place in 2001–02. At that time, the Qatari K–12 education system served about 100,000 students, two-thirds of whom attended schools that were government financed and operated. The RAND team found several strengths in this existing system. Many teachers were enthusiastic and wanted to deliver a solid education; some of them exhibited a real desire for change and greater autonomy. Additionally, parents appeared likely to accept new schooling options.

But the weaknesses in the existing system were extensive. There was no vision of quality education and the structures needed to support it. The curriculum in the government (and many private) schools was outmoded, under the rigid control of the Ministry of Education, and unchallenging, and it emphasized rote memorization. The system lacked performance indicators, and the scant performance information that it provided to teachers and administrators meant little to them because they had no authority to make changes in the schools. For a country with such a high per capita income, the national investment in education was small. Teachers received low pay and little professional development, many school buildings were in poor condition, and classrooms were overcrowded.

Designing the New System

Most of the system's weaknesses were already well known in the country; in fact, there had been previous attempts at modernization, all of which had been unsuccessful because they lacked a strong vision and a clear implementation strategy. Together, the extensive concerns about the system and the past failures to reform it argued for system-changing solutions rather than incremental approaches, plus a well-defined implementation plan.

RAND recommended that no matter what else was to occur, the basic educational elements of a standards-based system had to be put in place. The most fundamental need was clear curriculum standards oriented toward the desired outcomes of schooling. The new system's cur-

riculum, assessments, and professional development would all need to be aligned with these clear standards. To promote continuous improvement, the initiative called for education data to be collected, analyzed, and disseminated to the public.

These basic elements of a standards-based system—standards, curriculum, assessments, professional development, and data use—can be managed using different governance systems, ranging from centralized to decentralized and from limited choice and variety to significant choice and variety. RAND developed three specific system-changing options to present to the Qatari leadership for discussion: (1) a Modified Centralized Model, which upgraded the existing, centrally controlled system by adding or improving the basic elements; (2) a Charter School Model, which decentralized governance and encouraged variety through a set of schools independent of the Ministry and which allowed parents to choose whether to send their children to these schools; and (3) a Voucher Model, which offered parents school vouchers so that they could send their children to private schools and which sought to expand high-quality private schooling in Qatar.

The Qatari leadership rejected the first reform option as too similar to reform attempts of the past, which had produced specific improvements but left most of the system unchanged. It found the third option attractive but ruled it out as well, viewing it as riskier than the second option because of its reliance on the private market to open new schools. It decided to proceed with the second option, which would encourage parental choice, partially decentralize governance, and provide new school models. To better communicate the model's principles to the public, it was given a new name—the Independent School Model. This model was to include all the basic educational elements and was to be based on four principles: autonomy, accountability, variety, and choice. The adoption of these particular principles was notable in a region where such principles are both rare and poorly understood.

RAND then refined the basic design of the reform and developed a detailed plan for its implementation. The implementation plan specified that there would be four new institutions, three permanent and

one temporary, that would aid in changing the power and authority within the system:

1. *Supreme Education Council*. The SEC would be a permanent institution composed of members representing the end users of the education system. It would be responsible for setting national education policy.
2. *Education Institute*. This institution would also be permanent. It would have responsibility for overseeing and supporting the new, Independent schools and for
    a. Contracting with the new schools and supporting their operation
    b. Allocating resources to the Independent schools
    c. Developing national curriculum standards for grades 1–12 in four subjects—Arabic, mathematics, science, and English
    d. Developing training programs for teachers in the Independent schools and promoting a supply of teachers (either from Qatar or abroad) able to teach according to the curriculum standards.
3. *Evaluation Institute*. Also permanent, the Evaluation Institute would monitor all student and school performance in both Ministry and Independent schools and be responsible for
    a. Designing and administering national tests for grades 1–12 for the four subjects in item c, above, as well as surveys focusing on students, teachers, parents, and principals
    b. Producing annual "school report cards" for distribution to schools and parents
    c. Operating the national education data system
    d. Performing special studies on the schools and the reform's progress.
4. *Implementation Team*. This institution would be temporary. Its role would be to assist in establishment of the other institutions and to perform oversight, coordination, and advisory functions during the transition to the new system.

This new structure was to run in parallel with the existing Ministry of Education. The Ministry staff and Ministry-operated schools would be unaffected for the most part during the early years of the reform. In this way, parents could exercise real choice as to whether to send their children to the new schools or keep them in the Ministry or private schools. The Evaluation Institute would test students in both the new schools and the existing government schools, as well as in some private schools; it would also survey the students, teachers, parents, and principals of all these schools about school practices and perceptions of quality. Parents thus would have access to objective information about the quality and characteristics of schooling options for their children.

To promote flexibility, reliance on rules and hierarchy in the two new Institutes was intended to be less than in the Ministry, and a small number of staff were to be employed. Employees would be expected to support collaboration, teamwork, individual creativity, initiative, and personal accountability.

Implementing the New System

In 2002, the Qataris began implementing the reform. The accomplishments that occurred in only three years were remarkable. Shortly after the design of the reform was approved, the SEC and the Institutes were established in Qatari law. The SEC members and the core staff of the Institutes were identified and put in place within the first year. At the same time, many of the reform's programs began, with external consultants being relied on for a considerable amount of the development work.

Qatar now possesses curriculum standards in Arabic, mathematics, science, and English for all 12 grades. The standards are comparable to the highest in the world, and the mathematics and science standards are published in Arabic and English to make them accessible to the largest group of educators. Of particular note are the new standards for the study of Arabic, which stress practical language skills using a variety of linguistic materials.

In 2004, the Evaluation Institute tested every student in the Ministry schools and students in many private schools to document achievement levels before the reform's Independent schools began to open. It also surveyed all principals, teachers, and parents and most students in these schools. These tests and surveys were then upgraded and repeated in 2005 and 2006. The tests are the first objective, independent measures of student learning available in the Arabic language.

Potential school operators responded enthusiastically to the call to open schools. The Education Institute selected operators for the first generation of schools—the 12 Independent schools that opened in Fall 2004—from a pool of 160 initial applicants; all 12 opened under three-year renewable contracts. In 2005, 21 additional Independent schools opened as Generation II, and 13 more opened in 2006 as Generation III.

As usual in a reform this ambitious and rapid—whether in Qatar or elsewhere—there were challenges along the way. Since Qatar has a small population, staff and contractors had to be recruited from around the world to fill specialized positions. Filling all of the institutional positions in such a short time was challenging. Foreign experts brought needed experience, but many of the international organizations relied on staff at their home locations, which were separated from Qatar by great distances and many time zones. Teams had to find ways to collaborate across culture, distance, and time to implement the reform's many programs.

The reform's wide scope was responsible for additional challenges. One ongoing, key challenge was that of maintaining everyone's focus on the interrelated changes to the whole system, especially as the number of staff and contractors expanded. The reform's ambitiousness and scope also made it challenging to communicate the vision of the reform to the many constituencies interested in the education system.

Recommendations

As members of the team that supported these efforts over four years, we developed significant insight into what worked, what did not work,

and why. Based on our on-the-ground experiences, as well as a more general knowledge of reform efforts elsewhere, we are able to offer four recommendations for strengthening the reform as it continues to move forward:

- *Continue to build human capacity through knowledge transfer and investment.* Qatar needs more local capacity to manage the reform. Increased expertise is needed in the teaching workforce and among the Institute staff. Non-Qatari specialists are likely to be required in the future, but it is important that they find the means to transfer knowledge to Qataris to build local human resources and that the Qataris continue to invest in their human resources devoted to education.
- *Continue to promote the principles of the reform.* The four principles of the reform—autonomy, accountability, variety, and choice—are new in this region. As a result, the SEC, Institutes, and schools should continue to promote and develop these principles in their organizational structures, personnel policies, and activities. It is particularly important that the principles of decentralized autonomy and accountability for results be reinforced.
- *Expand the supply of high-quality schools.* The success of the reform's system-changing design rests partly on the establishment of high-quality Independent schools. Qatar should seek to attract the best school operators without regard to nationality. In addition, the reform should support school operators as they develop and expand their visions of quality education.
- *Integrate education policy with broader social policies.* The education reform resides within a broader social, political, and economic system, which includes social welfare policies and a civil service system that rewards people in government positions. These social systems and government policies must be aligned with the modernization objectives of the Qatari leadership if the country is to achieve its vision. The education reform is limited in what it can accomplish without reinforcement across these sectors of society.

Implications Beyond Qatar

For Qatar, this project offers the promise of greatly improved education for its children. Thanks to this reform, some of Qatar's children are in learner-centered classrooms within improved facilities where better-prepared and better-trained teachers guide them in accordance with internationally benchmarked standards. As the reform progresses, these benefits should extend to more children.

In addition, because the reform has provided a rich data system and a variety of schooling options, Qatar now has the ability to examine education processes empirically, measure outcomes objectively, and implement improvements as needed. Beyond Qatar, international educators and researchers can use the data system to learn how effective the different approaches chosen by Qatari schools are and to apply this knowledge to other situations and other societies.

The reform's design and its implementation offer an approach for developing a standards- and choice-based system alongside a more traditional system, an approach holding the promise of improved quality. Other countries can learn from this model of institutional change and its implementation.

Some of this new reform's principles are already spreading to other countries in the region. The emirate of Abu Dhabi in the United Arab Emirates recently adopted a strategy of public financing for private providers of education that is similar to that of Qatar. Additionally, the Secretary General of the GCC praised Qatar's initiative, especially its curriculum standards. Since these curriculum standards are the foundation for teaching, learning, and accountability, the Secretary General's praise, motivated by concern throughout the region about preparing students for later life, represents a major endorsement of the approach taken in Qatar.

The leadership of Qatar has embarked on a bold course to improve its education system. Qatar's example should serve to point the way for other countries to examine their own education systems, begin an improvement process, and incorporate some or all of this reform's principles into their plans for reform. The Qatar education reform and the strong interest it has elicited hold the promise that students in the

region will be better prepared to think critically and to participate actively in their workforces and societies.

Acknowledgments

We begin by thanking the Emir of the State of Qatar, His Highness Sheikh Hamad Bin Khalifa Al Thani, and his Consort, Her Highness Sheikha Mozah Bint Nasser Al Missned. These leaders had extraordinary vision in sponsoring and supporting this education reform—not only to improve life for the people of Qatar, but as a model from which the world can learn about education systems. We are grateful for the trust these leaders placed in our RAND team, affording us an incredible experience: the opportunity to distill the lessons learned from countless other education reform efforts to develop a bold vision for what education could be and how it could operate, both in Qatar and around the world.

Project Participants

The ambitious scale and scope of this education reform have depended on a great many people. We hope to show our appreciation for these partners by naming many of them here. We also thank those whom we have failed to mention and apologize for our oversight.

- The Coordinating Committee and Implementation Team members: Her Excellency Sheikha Ahmad Al Mahmoud, Sheikha Abdulla Al Misnad, Mohamed Fathy Saoud, Nasser Abdulghani, Abdul Jaleel Al Hamanat, Bader Al Qayed, and Eiman Al Ansari.

- The Supreme Education Council members: His Highness Sheikh Jassim Bin Hamad Al Thani, His Highness Sheikh Tamim Bin Hamad Al Thani, Her Highness Sheikha Mozah Bint Nasser Al Missned, Her Excellency Sheikha Ahmad Al Mahmood, Sheikha Abdulla Al Misnad, Mohammed Saleh Al Sada, Mohammed Khalid Al Mana, Badr Abdullah Al Darwish, and Sheikh Abdullah Bin Saud Bin Abudl Aziz Al Thani.
- The Institute Directors: Darwish Al Emadi, Adel Al Sayed, Sabah Al Haidoos, and Jehan Al Meer.
- The Supreme Education Council Coordinators: Khalid Al Zamat, Ahmed Ibrahim Al Janahi, and Muhammed Al Mohannadi.
- The Office Directors of the Education and Evaluation Institutes, Shared Services, and the Communications Office (selected list): Bader Al Qayed, Salem Al Naemi, Juan Enrique Froemel, Nafez Alyan, Mohammed Al Ansari, Eiman Al Ansari, Howaida Nadim, Tariq Abdullah, Theodore Josiah Haig, and Nawal Al Sheikh.
- The staff of the Education and Evaluation Institutes and Shared Services: Abdel Ghaffar Eldawi, Abdul Gabbar Alsharafi, Adam Al Saadi, Ahmed Al Zuwaidi, Aziza Mohsen, Dafallah Hammad, Ebtehal Al Dhneem, Elham AlSalahi, Ghada Quffa, Hala Abu Hijleh, Hala Mohamed Samha, Hosam Abdel Dayeem, Huda Buslama, Karen Reid, Catherine Sutherland, Lulwa Ibrahim Mohammed, Majed Ibrahim Obaid, Maryam Al Emadi, Mohammed Radwan, Mahmoud Khaedr, Mona Alemaddahi, Nadia Baker Abulaban, Nadia Yousef Abu Hashim, Noor Almuzaffar, Nooralhouda Al Rasheed, Rula Imran, Sara Ageel, Sebaie El Sayed Ibrahim, Shahnaz Abdulrasoul, Zeinab Khater, Ashraf Ismail, Radha, Ranjith, Basheer Chittian, Abdul Majeed, Abeer Ghazi Mubarak, Aysha Al Hashemi, Amna Nasser Alsowaidi, Areej Hijazi, Basleh Amer Hamad, Eisa Nasser, Haya Al Naimi, Ibrahim AbdulRahman, Ibrahim Mohammed Al Aziz, Jacob Abraham, Markus Broer, Mohammed Abdelsalam, Nasser Al Mulla, Noor Al Jaber, Noor Al Zaini, Rajaa Saleh, Reem Al Binali, Roshan Sabar, Sareeah Rashid Masoud, Suha Zayadeen, Yousuf Al Mulla, Elhady Saleh Eid, Mohammed Shafi, Abdelrehman Ahmed Al Ibrahim, Abdulla Al Kahtani, Abdulrah-

man Ibrahim, Abu Baker Abul Hassan, Aisha Ghuloum, Ali Al Qadhi, Amal Mohammed Al Jasmi, Amina Al Obaidly, Asif Ayub, Aziz Ur Rehman, Dalia Abdulla, Doaa Ali Sobeh, Duha Abbass, Faisal Mohammedd Bagazal, Fareeda Sultan, Fatma Al Aamri, Fauzia Al Khater, Fauzwia Mohammed, Ghada Ahmed, Haifa Al Qawasmi, Hajar Al Kubaisi, Hala Al Khayat, Hanady Al Jaber, Heba Hamad, Heba Osman, Hend Jarrar, Ibtesam Sultan, Inas Adas, Jamal Abdulla Al Medfa, Jumana Jarrar, Khalid Bu Mahmoud, Khalid Salem Al Jamaani, Khawla Abdelrahman, Mai Al Binali, Maimona Ahmed, Manar Al Dossari, Mariam Ali Al Salat, Mona Mohammed Al Wazir, Munir Fathi Al Sherbini, Mustafa Ali Ali Ali, Nahed Abdelkareem, Nasser Al Naemi, Nasser Saleh Al Saadi, Noura Al Hashmi, Nuha Mohammed, Omar Al Nama, Omar Khalid Mohammed, Rashed Abu Al Hassan, Reem Mohammed Hamdani, Rehab Al Mutawa, Seham Al Majed, Siham Mohamed, Somaia Elalami, Syed Subhani, Wajiha Ahmed, Yousaf Ismail, Somaia Al Motawa, Abdulrahman Al Hajri, and Yousuf Al Haidous.

- The international contractors and their staff: The Academy for Educational Development, Charter School Development Center, CfBT Education Trust (formerly the Centre for British Teachers), CTB/McGraw Hill, Educational Testing Service, Forum One, Lipman Hearne, Mosaica, Multiserve, the National Opinion Research Center at the University of Chicago, and Texas A&M University.

We would also like to thank Qatar University and the Education City branch campuses for collaborating with RAND and with the education reform at several points.

Many others supported this reform through their work. We truly appreciate their contributions to this remarkable effort.

This Volume

This monograph presents an analytic summary of a complex project that had both a design phase and an implementation phase. In the course of the two phases, our RAND team and many other project participants produced thousands of pages of writing to build the evidence base for the reform, document aspects of the project, present recommendations, and discuss and record decisions. The Appendix in this document lists the RAND project staff, many of whom wrote these individual project documents and all of whom contributed to the work. Those of us named as authors on the cover made the most contributions to the project in terms of ideas and leadership and wrote or co-wrote most of the source material used to prepare this report.

We would like to acknowledge some specific contributions. Much of Chapters Three, Four, and Five draws on the report produced for the client at the end of the design phase. In addition to the already named authors, Jerrold Green and C. Richard Neu contributed to that report. Chapter Eight is adapted from a paper authored by Gabriella Gonzalez, as lead, and Vi-Nhuan Le and Lou Mariano. Chapter Nine is based on an early draft by Nate Orr. Jenny Cashman organized the project archives and prepared additional early drafts for use by the authors. Nate Orr, Michelle Cho, and Mirka Vuollo assisted Jenny Cashman with the archives, and all provided input into early drafts. In addition to being part of the project management team, Julie DaVanzo and Sheila Kirby provided useful detailed comments on drafts of this monograph. Christopher Dirks helped with document production.

Michael Rich and C. Richard Neu provided much support and encouragement throughout the project, as well as thoughtful comments during the preparation of this monograph. In the later parts of this project, we benefited from the support of our colleagues at the RAND-Qatar Policy Institute in Education City, directed by Richard Neu and with Donna Betancourt as operations director. Susan Bodilly provided helpful comments on many drafts. We also benefited from the thoughtful reviews of Paul Hill, Serra Kirdar, and Harry Patrinos, and the careful and patient editing of Jeri O'Donnell.

Abbreviations

CfBT	CfBT Education Trust (formerly the Centre for British Teachers)
CSDC	Charter Schools Development Center
ETS	Educational Testing Service
GCC	Gulf Cooperation Council (see Glossary)
GDP	gross domestic product
GTZ	Gesellschaft für Technische Zusammenarbeit (German society for technical cooperation)
ISOA	Independent School Operator Agreement
K–12	kindergarten through grade 12
NORC	National Opinion Research Center (at the University of Chicago)
PPOR	per-pupil operating rate
PIRLS	Progress in International Reading Literacy Study
PISA	Program for International Student Assessment
QEWC	Qatar Electricity and Water Company
QCEA	Qatar Comprehensive Educational Assessment
QNEDS	Qatar National Education Data System
QSAS	Qatar Student Assessment System
QU	Qatar University
R&D	research and development

RFP	request for proposal
RFQ	request for quotation
SEC	Supreme Education Council
SSIT	Secondary School for Industrial Technology
SSO	School Support Organization
TIMSS	Trends in International Mathematics and Science Study
TPCP	Teacher Preparation and Certification Program
UAE	United Arab Emirates
UK	United Kingdom
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization

Glossary

Arab League. Formally known as the League of Arab States. Currently 22 members coordinating on political, economic, cultural, and social issues pertaining to the Arab region.

Community school. A type of private school in Qatar that offers curriculum from a country other than Qatar, generally for the children of a specific group of expatriates living in Qatar (e.g., Indians, British, Pakistani, Americans). These schools are sponsored by the embassy of the relevant country.

Content standards. Broad expectations about what students should know and be able to do in particular subjects and grade levels.

Coordinating Committee. The group of Qataris and non-Qataris that worked with the RAND team during the reform project's design phase.

Curriculum standards. Descriptions, by subject and grade level, of the common content that students should learn in each subject (content standards) and what students must do to demonstrate proficiency (performance standards).

Curriculum Standards Office. The office within the Education Institute that is responsible for developing curriculum standards for the Independent schools.

Data Collection and Management Office. The office within the Evaluation Institute responsible for collecting and maintaining data that informs school constituents and decisionmakers about the reform's progress and the education system's performance.

Education City. A planned development, located in Doha and sponsored by the Qatar Foundation, that houses branch campuses of several universities: the Virginia Commonwealth University School of the Arts, the Weill Cornell Medical College, Carnegie Mellon University, Texas A&M University, and Georgetown University School of Foreign Service. Also hosts the RAND-Qatar Policy Institute (RQPI), the Learning Center (a school for special needs children), Qatar Academy (a private K–12 school), the Academic Bridge Program (a preparation program for postsecondary study in English), the Qatar Science and Technology Park, a Specialty Teaching Hospital, and other programs.

Education Institute. The new government organization that was developed as part of the reform to contract with the Independent schools and provide them with the financial, professional development, and other resources necessary to educate students successfully.

Emir. The title given to the ruler of an emirate, such as the leader of Qatar.

Emiri Diwan. The executive office (palace) from which His Highness the Emir conducts affairs of state.

Evaluation Institute. The new government organization that was developed as part of the reform to measure the performance of schools, students, and other education constituents.

Fatwa. A religious proclamation given by an Islamic scholar or religious authority.

Finance Office. The office within the Education Institute that is responsible for disbursing government funding to the Independent schools and for monitoring the use of those funds.

Gulf Cooperation Council (GCC). The Arabian Gulf regional organization made up of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE). Pursues common regional social and economic interests.

Higher Education Institute. The new government organization that was developed as part of the reform to administer scholarships and advise individuals about career options and opportunities for higher education in Qatar and abroad.

Implementation Team. The extension of the Coordinating Committee that operated for the first six months of the project's implementation phase. Co-chaired by the RAND project director and Qatar's Undersecretary of Education.

Independent school. A publicly funded, privately run school (similar to a charter school in other countries) established through the education reform in Qatar. The first Independent schools, referred to as the Generation I schools, were opened in Fall 2004.

Independent Schools Office. The office within the Education Institute that provides guidance and support to Independent schools and their operators.

International school. A type of private school in Qatar that follows the curriculum of a foreign country or a general international curriculum and often enrolls children of both Qataris and expatriates living in Qatar. These schools are not under embassy sponsorship.

Kuttab. Informal class taught in mosques or homes in which children learn to read, write, and memorize passages from the Qur'an. Plural form: *katatib*.

Model school. A Ministry of Education school, begun in the late 1970s for boys in grades 1–4, in which the teachers are women.

Performance standards. Explicit definitions of what students must do to demonstrate proficiency at specific levels on the content standards.

Preparatory school. Grades 7–9 in Qatar.

Planning Council. The government agency in Qatar that collects and reports major social and economic statistics, including the national census.

Primary school. Grades 1–6 in Qatar.

Private Arabic school. A type of private school in Qatar that follows the Ministry of Education curriculum.

Professional Development Office. The office within the Education Institute that provides professional training programs for teachers, principals, and others in the Independent schools.

Qatar Academy. The private K–12 school operated by Qatar Foundation and located in Education City in Doha.

Qatar Foundation. Formally, Qatar Foundation for Education, Science, and Community Development, a private, non-profit organization established in 1995 with Her Highness Sheikha Mozah as chairperson. Mission is to raise both the competency of individuals and the quality of life in Qatar through investments in human capital, innovative technology, state-of-the-art facilities, and partnerships with elite international organizations.

Qur'an. The holy book of Islam. Sometimes seen as *Koran* in English.

Research Office. The office within the Evaluation Institute responsible for designing and monitoring the comprehensive data system and for conducting special studies on schools and on the reform in general to support planning and policymaking.

School Evaluation Office. The office within the Evaluation Institute responsible for developing school report cards, which provide school-level achievement scores from the national tests, as well as additional descriptive and evaluative information about each school.

Secondary school. Grades 10–12 in Qatar.

Scientific complex. A cluster of elementary, preparatory, and secondary schools with its own science-oriented curriculum and education philosophy. There are two scientific complexes—one for boys, one for girls. Originated in 1999, they originally received funding from the Ministry of Education and admitted only the highest-performing students. In 2004, both complexes were converted to Independent school status by the Supreme Education Council; they now receive funding and support from the Education Institute and are in the process of implementing a new, open-enrollment policy.

Sharia. Islamic law. Also used to refer to Islamic studies in schools in Qatar.

Sheikh. A title given to men of nobility or high esteem in Qatar and other Arab countries.

Sheikha. A title given to women of nobility or high esteem in Qatar and other Arab countries. Also a common female given name, in which case no title is implied.

Student Assessment Office. The office within the Evaluation Institute responsible for designing and implementing a national student assessment system.

Supreme Education Council (SEC). The new government entity established as part of the reform to be Qatar's highest education policymaking body.

TerraNova. The name of a series of standardized tests developed by CTB/McGraw Hill.

Wizarat Al Maarif. The name of the Ministry of Education when it was founded in Qatar in the 1950s. Now known as Wizarat At-Tarbiya wat-Ta'leem.

CHAPTER ONE

Introduction

The leadership of the Arabian Gulf nation of Qatar is similar to the leadership of many other countries in viewing education as the key to future economic, political, and social progress. Many have concluded that a country's ability to compete in the global economy and enable its citizens to take full advantage of technological advances relies on upgrading the quality of the schooling provided and ensuring that what is taught is aligned with national priorities and international developments.

In Summer 2001, the State of Qatar's leadership asked the RAND Corporation to examine the K–12 (kindergarten through grade 12) school system in Qatar. The leadership was motivated by several concerns, the chief one being that the nation's school system was not producing high-quality outcomes for Qatari students in terms of academic achievement, college attendance, and success in the labor market. In addition, the leadership was concerned about the system having become rigid and outdated and having proved resistant to reform efforts.

Background

Qatar is a small Islamic and Arab nation, rich in natural resources (oil and natural gas) but without many citizens. Indeed, the majority of residents are expatriates who reside in Qatar specifically to work. Although the country has a fairly well developed system of government-provided education for both boys and girls, few of its citizens take private-sector

positions, which are increasingly important to the economy. Moreover, both employers and postsecondary institutions complain that the K–12 graduates produced by the public school system are unprepared for, respectively, work and further study.

Innovations to reform the public school system have been tried, and some have been successful on a small scale. But Qatar's leaders sensed that system-wide reform was needed to position Qatar for the future. The leadership also desired that changes in the education system be consistent with other initiatives for social and political change, such as the move toward increasing democratic rule and wider opportunities for women.

RAND's task was to examine critically the entire system of Qatari schooling, both government run and private, at the pre-college level. Specifically, the initial RAND project had four goals:

- Understand and describe the current system
- Identify problems with the system
- Recommend alternative reform options to improve the system
- Devise a plan to implement the chosen reform option.

Over the course of four months, our RAND team collected and analyzed information about the education system to gain a general understanding of how it worked and to identify its chief strengths and weaknesses. We found that many of the problems with Qatar's existing school system were widely known. Parents, students, teachers, business people, and others expressed similar concerns about the questionable quality of Qatar's schooling. There was also a general sense that nothing could be done to effect change. On the positive side, we found that the school system included enthusiastic teachers, some innovative schools, and high-level decisionmakers who were in touch with international developments in curriculum and pedagogy. But these advantages were offset by a number of shortcomings: an overly rigid curriculum emphasizing rote learning, hierarchical institutions lacking clear goals, a lack of incentives and accountability, and misallocated resources.

The RAND analysis pointed to two main pursuits for the reform: improve the education system's basic elements through standards-based

reform and devise a system-changing plan to deal with the system's overall inadequacies. In line with the first of these, the reform would have to start with clear curriculum standards that progressed grade by grade toward the desired outcomes of schooling. Curricula, assessments, and professional development would be needed, all aligned with such standards. Also needed, to promote continuous improvement, would be education data collection, analysis, and dissemination to the public. For the second pursuit, the reform would have to rework the system to address its structural problems and systemic weaknesses. In January 2002, RAND presented three reform models as options for the Qatari leadership to consider, each of which included the basic system elements needing improvement:

1. *A Modified Centralized Model.* This option retained much of the existing system but introduced some new elements, such as shared decisionmaking between government and schools and extensive student testing.
2. *A Charter School Model.* This option maintained some government control and separate private schools but introduced opportunities for interested parties to operate publicly funded "charter" schools with limited government oversight, parental choice of schools, and an independent monitoring body.
3. *A Voucher Model.* This option maintained minimal government oversight and privatized the system by allowing parents to use government-issued vouchers to choose any school (including private school).

After consideration of these three options, the Qatari leadership asked RAND to elaborate on both a design and an implementation strategy based on the second option, a Charter School Model. In May 2002, RAND presented the elaborated design, renamed the Independent School Model. This design—whose aim is to improve education in Qatar by generating a variety of schooling alternatives with differing missions, curricula, pedagogical practices, and resource allocation models—rests on four principles: autonomy, accountability, variety, and choice. It builds a new system infrastructure, introduces novel

concepts for thinking about education in Qatar, and, overall, represents a major departure from the established system.

Alongside this design for reform, RAND developed a detailed, integrated implementation strategy. RAND also agreed to the Qatari leadership's request that RAND play a central role in implementing the reform. As a result, our RAND team embarked on a most interesting and challenging project, one that offered an unprecedented opportunity to assist in changing the education system for an entire country. Since the reform's launch in Fall 2002, our RAND team has worked side by side with the Qataris, and with various contractors worldwide, to establish the new, Independent school system.

This Monograph

This monograph focuses on Phase I of the project, which ran from project inception in 2001 to the opening of the first Independent schools in Fall 2004, and provides only a brief update of more-recent developments on the project. The aim here is to document the process of developing the design and the early implementation efforts. We are aware that the work in Qatar could have broader application, reaching beyond Qatar's school system. However, this monograph is largely descriptive and focuses solely on the experience in Qatar.

In a project as complex as this one, there are many aspects and perspectives worthy of presentation. We have selected certain topics and perspectives for this monograph, and the contents represent our viewpoints. This document is not meant to cover the entire reform effort or to speak for others involved in this effort. The Supreme Education Council's website (http://www.education.gov.qa, which has a link to the English version) provides additional information on the reform and its current status.

Chapter Two of this document gives an overview of the nation of Qatar and describes its education system. Chapter Three presents the findings of RAND's initial analysis of the Qatari education system; Chapter Four discusses the three models considered for the reform's design and describes the rationale behind the choice made (and its

renaming as the Independent School Model). Chapter Five presents the refined design and the implementation strategy that were adopted. The next four chapters then describe the implementation process, each chapter focusing on a key activity of the initial implementation period (Phase I). Chapter Six focuses on the effort involved in building the organizational structure for the reform; Chapter Seven, on the process for developing new curriculum standards; Chapter Eight, on the student assessment system; and Chapter Nine, on establishing the Independent schools. Chapter Ten reviews some of the challenges in implementing the reform; the final chapter, Eleven, summarizes the accomplishments of the reform effort thus far, makes recommendations for the implementation as it proceeds, and offers a few words about implications of the reform that go beyond Qatar.

CHAPTER TWO

Qatar and Its Education System

To understand the education reform that was designed for and implemented in Qatar, it is essential to have some understanding of the Qatari context. We begin this chapter with descriptive overviews of Qatar's historical and political background, economy and industry, and population, citizenship, and workforce. We then describe in some detail the education system—as it existed in 2001, when this project began—and its characteristics, as well as previous attempts at reform. These topics are important to the discussion because the current reform has been influenced not only by the nature of the education system itself, but also by policies and traditions lying outside that system.

Historical and Political Background

Qatar (see map, Figure 2.1) is one of the smallest of the Gulf States—only 11,427 square kilometers (making it similar in size to the U.S. state of Connecticut)—but it has a unique status in today's world because of its oil and natural gas reserves, its strategic location, and its bold leadership. Bordered on the south by Saudi Arabia, Qatar has a flat, rocky terrain covered with sand dunes. It also has a hot, desert climate (its temperatures range from 25 to 49 degrees Centigrade, or 77 to 120 degrees Fahrenheit), sometimes with high humidity. Most of its population resides in coastal cities and towns.

Qatar as a country has made the shift from tribal society to modern state in a matter of decades. The origins of the majority of the indigenous Qatari population can be traced mainly to two waves of

Figure 2.1
Map of Qatar

SOURCE: Department of Peacekeeping Operations Cartographic Section, Map No. 3867 Rev. 3, United Nations, January 2004.

NOTE: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

migration (Winckler, 2000). At the time of the first migration, there were already three major tribes in Qatar: Al Musallam, Maad'hid

(later Al Thani), and Al Bu Hossain (later Al Bu Aynan). In the 1760s, the Jalahima and Utub tribes of present-day Kuwait and the Al Hasa region in present-day Saudi Arabia moved to join the existing tribes. The second migration took place later in the 1700s, at the time of the Wahhabi expansion, when Wahhabis came from the neighboring areas of Nejd and Al Hasa in central Arabia. Some Qataris are also descended from Omani tribes. Most Qataris are Arabs, and virtually all Qataris are Muslim, the vast majority of them Sunni Muslim (Economist Intelligence Unit, 2004).

In 1868, Sheikh Mohammed Bin Thani and Lewis Pelly of the British government signed an agreement establishing Qatar as a country under British protection. At the beginning of the 20th century, Qatar comprised a small set of villages dependent on pearl diving, camel breeding, horse breeding, and fishing. In 1907, Qatar's resources consisted of 1,430 camels, 250 horses, and 817 pearl boats (Lorimer, 1908–15, Vol. 2, p. 1533). Qatari society was governed by Islamic principles and tribal custom, and its settled population of 27,000 was predominantly nomadic, made up of 25 major clans (Crystal, 1990) and 15 settled tribes (Al-Kobaisi, 1979).

The terms of the 1868 treaty were expanded in 1916, and Qatar remained a British protectorate until 1971. To secure safe passage of goods from the Gulf to India, the British concluded a series of treaties with Gulf tribal leaders in which those leaders promised to suppress all piracy. In exchange for Britain's military protection, Qatar relinquished autonomy in foreign affairs (U.S. Library of Congress, 1994).

The first oil concession agreement was signed between Qatar and the Anglo-Persian Oil Company on May 17, 1935, for 75 years. Oil was discovered in Qatar in 1939, but World War II prevented the oil resources from being actively developed for another decade (Cordesman, 1997). Oil exports and payments for offshore rights began in 1949 (U.S. Library of Congress, 1994). During the 1950s and 1960s, gradually increasing oil revenues brought prosperity, substantial social progress, and rapid immigration.

Government structures and public services were developed in the 1950s under British guidance. In 1951, plans were drawn up to establish a power-generating station, a new hospital, a drinking-water

grid, and new schools. The infrastructure, foreign labor force, and bureaucracy continued to grow in the 1960s. Although the economy at that time relied on the export of a single raw material (Crystal, 1990), there were some attempts to diversify Qatar's economic base—notably, the establishment of a cement factory and a national fishing company (U.S. Library of Congress, 1994).

When the United Kingdom (UK) announced its plan to terminate the treaty relationships with the Gulf sheikdoms in 1968, Qatar first joined the other eight countries then under British protection (the present United Arab Emirates [UAE] and Bahrain) in a plan to form a union of Arab emirates. But the respective rulers could not agree on boundaries or political representation in the new grouping. Qatar then sought independence as a separate entity and became the fully independent State of Qatar on September 3, 1971. Soon after it proclaimed independence, Qatar became a member of the United Nations (UN) and the League of Arab States (more commonly known as the Arab League).

The ruling Al Thani family was prominent in Qatari society in the mid-1800s, and it was Sheikh Mohammed Bin Thani who signed the first agreement with the British in 1868. Successive rulers of the country also descended from the Al Thani family, including the current emir, His Highness Sheikh Hamad Bin Khalifa Al Thani. The continuation of the ruling families is perhaps the most obvious manifestation of Arab tribalism in the Gulf countries today (U.S. Library of Congress, 1994). The emir selects his heir, who is always a male but not necessarily his eldest son.

The government of the newly independent country was structured as an emirate, with a provisional constitution granting full legislative and executive powers to the head of state. Emirs are obligated to rule in accordance with Islamic principles, which include fairness, honesty, generosity, and mutual respect (U.S. Library of Congress, 1994). A council of 14 ministers, appointed by the emir, was set up for administration of the state. This Council of Ministers was responsible for drafting legislation, supervising the implementation of laws, running the financial and administrative system, and preparing development plans for Qatar (Nafi, 1983). According to the Qatar Embassy's

website (http://www.qatarembassy.net), an advisory council was established in 1972 to submit proposals and suggestions to the government, as well as to recommend approval of laws submitted to it by the Council of Ministers. The composition of the Advisory Council was such that it reflected the views of the broad base of Qatari society. It was a partially elected consultative body, its members selected from representatives chosen through a limited electoral process (U.S. Library of Congress, 1994). The size of the Council of Ministers was increased to 30 members in 1975. This structure of government remained relatively unchanged for more than two decades, with the rule of the country passing from one generation of Al Thani to the next.

Since its independence, Qatar has tended toward neutral foreign policy stances; for example, it avoided taking sides in the Cold War (Cordesman, 1997). However, the Iraqi invasion of Kuwait and the subsequent Persian Gulf War prompted Qatar to reconsider and revise many of its policies. On June 23, 1992, following the Gulf War, Qatar followed Kuwait in signing a bilateral defense cooperation agreement with the United States. The agreement provided for U.S. access to Qatari bases and future combined military exercises (U.S. Library of Congress, 1994). Qatar also continues to play an active role in the collective defense efforts of the Gulf Cooperation Council (GCC), a regional organization of the Gulf's Arab states: Qatar, Saudi Arabia, Kuwait, Bahrain, the United Arab Emirates, and Oman.

Sheikh Khalifa ruled as the emir from 1972 to 1995. From the mid-1980s on, he delegated much of the day-to-day governing to his son and heir apparent, Sheikh Hamad Bin Khalifa Al Thani, the current emir (Zahlan, 1989). On the morning of June 27, 1995, Sheikh Hamad proclaimed that he was taking over the government from his father, who was vacationing in Switzerland. The new emir had already been handling many affairs of state in Qatar for some time, serving as Minister of Defense and Commander in Chief of the Armed Forces.

Sheikh Hamad's vision for the future of Qatar was different from that of previous rulers. His ideas were progressive, geared toward developing a democracy. He initiated discussions on moving toward elected municipal councils and a legislative body, as well as a permanent constitution.

In July 1998, the Emir issued a decree setting up the framework for an elected municipal council of 29 members. Both men and women could run for these council positions and vote in the elections. The Emir emphasized the importance of these elections by saying that "municipal elections are the first step towards . . . the goal of a full-scale democracy" (Rathmell and Schulze, 2000, p. 54). Many Qataris were interested in holding these municipal council positions; by the time of the elections in February 1999, the final slate of candidates included 221 men and six women. Voter registration was also strong, with 22,225 registrants, of whom 45 percent were women. Voter turnout was around 95 percent in the capital city of Doha and 75 percent elsewhere. Although none of the female candidates won a seat on the first council (Bahry, 1999), a female member was elected to the municipal council in 2003 (Qatar National Bank, 2004).

In July 1999, the Emir established a 32-member commission to undertake a three-year study to develop a draft constitution specifying an elected parliament with legislative powers (Rathmell and Schulze, 2000). In April 2003, with an overwhelmingly positive response from voters, a permanent constitution was ratified. Although this constitution leaves considerable powers in the hands of the ruling Al Thani family, it calls for the current Advisory Council to be expanded to 45 members—30 elected members and 15 appointed by the Emir. Furthermore, voting will be universal for all Qatari citizens over the age of 18, male and female, and women will be entitled to stand as candidates. Freedom of expression, press, and religion are guaranteed, as is the right of citizens to assemble and to establish civic and professional associations. The Emir's conviction about the importance of this step was clear in a speech he gave the day before the referendum:

> The glory, prosperity, security, and safety of our homeland as well as its present and future are the joint responsibility of all of us. This necessarily requires creating a favorable environment characterized by responsible freedom of expression and adoption of the principle of popular participation in the process of decisionmaking. (Emir of Qatar, 2003)

Qatar's 1996 establishment and financing of the Aljazeera television station highlight the country's support of free access to information. The Emir offered to finance Aljazeera's operations for its first five years, after which the company would supposedly sustain itself through advertising revenues. State financing of the news station continues to date, however. Aljazeera has been unable to attract sponsors; many of those who might become sponsors are intimidated by the negative attitudes of other Arab governments.[1] In March 1998, the Emir took another step toward freedom of expression by abolishing the Ministry of Information to allow more freedom for journalists.

Other innovations have also been instituted, some with the assistance of the Emir's wife, Her Highness Sheikha Mozah Bint Nasser Al Missned. Sheikha Mozah has been actively involved in social reform in Qatar, particularly the development of educational opportunities. The Qatar Foundation for Education, Science, and Community Development was established in 1995, with Sheikha Mozah as chair of its board of directors. The mission of the private, non-profit Qatar Foundation is to raise both the competency of individuals and the quality of life in Qatar through investments in human capital, innovative technology, state-of-the-art facilities, and partnerships with elite international organizations. To achieve its mission, the Qatar Foundation has set up a number of affiliated organizations in the fields of education, health, and community development.[2]

The collective efforts of the Emir and other key leaders have catapulted Qatar to a position of global prominence. Qatar plays an active role in such regional cooperative organizations as the Arab League and the GCC. Democratization efforts and partnerships formed with other

[1] Estimates of Aljazeera's audience range from 30 million to 50 million, putting it well ahead of its competitors (Weisman, 2005). Considered the freest and most unfettered broadcast source in the Arab world, it provides an unprecedented range of news coverage, analysis, and commentary in Arabic. The station broadcasts views not normally discussed on the Arab airwaves, and its reporting has irritated several Arab governments (Economist Intelligence Unit, 2004), as well as the United States. The pressure caused by controversies and foreign criticism has accelerated plans to put Aljazeera up for sale (Weisman, 2005).

[2] One of these organizations is the RAND-Qatar Policy Institute, established in 2003.

countries, including military alliances with the United States, have earned the country both respect and a healthy dose of criticism.

Economy and Industry

Underlying Qatar's bold initiatives, regional leadership position, and international prominence is a strong economy that affords creativity and underwrites risk. Qatar's economy has grown dramatically over the past few years. Per capita income doubled from 1995 to 2000, going from around $14,500 to more than $29,000 (Kawach, 2002); and the most recent data put per capita income at $47,500 (International Monetary Fund, 2006), a figure that would be much higher if expatriates were excluded from the calculation.

Oil and natural gas account for more than 55 percent of gross domestic product (GDP), roughly 85 percent of export earnings, and 70 percent of government revenues (Central Intelligence Agency, 2004). Oil production was approximately 2,000 barrels per day in 1949, the first year of exports (Central Intelligence Agency, 2004). In 2003, Qatar's average output of crude oil was 750,000 barrels per day (Ministry of Foreign Affairs website: http:/English.mofa.gov.qa). Proven oil reserves should ensure continued output at current levels for approximately 20 years (Economist Intelligence Unit, 2004, p. 22).

In 1971, the year that Qatar became independent, vast natural gas reserves were discovered in northern Qatar. In the 1990s, Qatar began exploiting its offshore natural gas reserves in the North Field, one of the world's largest natural gas fields (U.S. Library of Congress, 1994). Qatar's proven reserves of gas are the third largest in the world, exceeding 7 trillion cubic meters (Economist Intelligence Unit, 2004, p. 18).

Prior to the exploitation of its natural gas fields, Qatar's wealth depended heavily on oil revenue, making it vulnerable to foreign-market fluctuations. The country's leaders have long recognized the need to develop industrial capabilities to reduce dependence on oil revenue (Nafi, 1983). Revenues from the export of crude oil have been used to fund a range of development projects within the country.

The petrochemical, chemical fertilizer, natural gas liquids, and steel industries were developed in the 1970s. In 1974, Qatar Steel Company Limited (QASCO) was started, as an agreement between Qatar and two Japanese companies, to produce reinforcing steel bars for export. The Qatar National Cement Company (QNCC) had already been established in 1965, with production beginning in 1969. Even though both of these manufacturing enterprises were developed for exports, they also provided building materials to support the intensive local construction efforts that began in the 1970s (Nafi, 1983).

These downstream industries remain important aspects of Qatar's economy today, although the country still relies heavily on oil and natural gas revenues. Qatar is also supporting research and development (R&D). Qatar Foundation recently established a Science and Technology Park that provides opportunities for scientific companies and international corporations to conduct R&D through collaboration with scientists from academic institutions in Doha. Anchor tenants include Shell, ExxonMobil, Total, EADS (European Aeronautic Defence and Space), and Microsoft.

In general, the business environment has changed since the current emir's rule began. For example, private capital is now traded on the Doha Stock Market, established in 1995. Although Arabic is the official language, English is widely spoken in the workplace (Qatar National Bank, 2004). Ideals of democratization have been promoted in the private-business sector, as evidenced by the shift of the Qatar Chamber of Commerce from an appointed board to an elected 17-member board in 1998—a change for which more than 3,700 Qatari businessmen voted. Semi-privatization of some sectors of industry is also under way. In 1998, the Ministry of Electricity and Water transferred responsibility for operation and maintenance of one of its power plants to the Qatar Electricity and Water Company (QEWC) (Rathmell and Schulze, 2000). The government owns 43 percent of the company; the remaining shares are held by individual and institutional Qatari investors. QEWC, or *Kahramaa*, later completely replaced the Ministry of Electricity and Water.

Population, Citizenship, and Workforce

In 1970, the Qatari government, assisted by British experts, carried out a census that reported a population of 111,113, of which 45,039, or more than 40 percent, were identified as Qatari (U.S. Library of Congress, 1994, p. 164). The U.S. Library of Congress notes that the 1970s oil boom and resultant influx of foreign workers produced large population growth, enough that an estimated 200,000 people lived in Qatar by 1977, about 65 percent of whom were non-Qatari. Population growth has continued—a 1986 census put the number of residents at 369,079; a 2004 count, at 744,000.

To be a Qatari citizen, one's father must be a Qatari citizen.[3] Non-Qatari women who marry Qatari men are granted citizenship once married and retain it as long as they remain married. Expatriates living in Qatar are almost never granted citizenship, for two reasons: the importance Qatar bestows on tribal identity, and the customs and practices that are factored into government obligations to citizens for sharing and allocating the nation's wealth (U.S. Congress Library, 1994). Non-citizens, even if born in Qatar, are ineligible for the government benefits provided to citizens. In addition, with few exceptions, they are not permitted to own land; and companies must be at least 51 percent Qatari owned (U.S. Library of Congress, n.d.). However, expatriates are able to take advantage of the heavy subsidization of many aspects of all residents' needs. Water, electricity, and gas are extremely inexpensive; some basic foods are subsidized; local telephone calls are

[3] Qatari citizens live predominantly in patriarchal, extended, and, occasionally, polygamous families. According to Qatari tradition, each household is part of a clan (a group of related families), and each clan is part of a tribe, which is a much larger group. A tribe usually traces its lineage to a particular ancestor (U.S. Library of Congress, 1994). Historically, each tribe had its own characteristics, such as different speech, dress, and customs; but many of these differences no longer exist (U.S. Library of Congress, 1994). Family and clan connections underlie political and economic activity. People tend to marry within the tribe. Marriage is a family and business matter, with parents introducing their children to each other after agreeing to the prospect of marriage. Extended family households contain a husband and wife, all their unmarried children, and their married sons plus their wives and children. Although ties among members of a tribe remain strong, the nuclear family household is slowly replacing the extended family household.

free; there is no employee income tax; and there are no property or municipal taxes (Qatar National Bank, 2004).

Since the 1950s, Qatar has used its income from oil to provide its citizens with a number of social welfare benefits. The government provides free education and health care to all Qatari citizens, and as part of the welfare system, male heads of household employed in the public sector are granted family allowances for each child. Qatari Social Security law stipulates that monthly allowances be paid to widows, divorcees, orphans, and those with special needs who have no providers. In addition, Qatari nationals who work as senior staff in government and semi-government offices are given free land and interest-free loans for the construction of residential houses. The government also constructs houses for Qatari nationals with limited incomes; beneficiaries have to pay back 60 percent of the cost to the government over a period of 20 to 25 years (Nafi, 1983).

Government employment has been another mechanism for distributing the nation's wealth. Qatari citizens prefer to work in the public sector (although they may also own private businesses): 86.5 percent of the Qatari national workforce is employed in the government sector, 8.85 percent in the joint sector, and 4.65 percent in the private sector (Peninsula, 2003). Nationals who work in the private sector are almost always employed in managerial positions (Winckler, 2000). Most Qatari nationals are strongly reluctant to work in manual occupations, so most manual work is done by others, either other Arabs or members of the Asian community (Winckler, 2000). Table 2.1 shows employment by sector, gender, and nationality.

The labor demands of the high-technology oil and gas industries surpass not only the willingness, but also the capacity of the local labor market. Foreign nationals living and working in Qatar represent a large proportion of the resident population, and the importation of foreign labor has been an increasingly important component of the Qatari economy. The percentage of Qataris in the workforce has fluctuated over the past three decades, from a high of 18.9 percent in 1975, to only 8.4 percent in 1990 (Winckler, 2000), and then up to 11 percent

Table 2.1
Number of Employees (Age 15 and Over) in Various Sectors, by Nationality and Gender, 2001

	Number of Employees		
	Female	Male	Total
Qatari population			
Government department	9,411	22,063	31,474
Government company	764	4,332	5,096
Mixed	157	1,646	1,803
Private	223	1,081	1,304
Diplomatic/int'l/regional	3	13	16
Domestic	0	10	10
Total	10,558	29,145	39,703
Non-Qatari population			
Government department	1,657	30,348	32,005
Government company	2,305	10,305	12,610
Mixed	777	6,421	7,198
Private	4,924	166,505	171,429
Diplomatic/int'l/regional	117	343	460
Domestic	23,269	21,761	45,031
Total	33,049	235,684	268,733
Total resident population			
Government department	11,068	52,411	63,479
Government company	3,070	14,637	17,706
Mixed	934	8,067	9,001
Private	5,147	167,587	172,734
Diplomatic/int'l/regional	119	356	476
Domestic	23,269	21,771	45,040
Total	43,607	264,829	308,436

SOURCE: Planning Council, 2002, Table 25.

in 2004 (Planning Council, 2004, Table 13).[4] The 2004 census documented a population of 744,000 residents. About 20 percent of the population is Qatari. Foreign workers holding temporary residence status, and their families in some cases, make up about 80 percent of the population (U.S. Department of State, 2003). About 20 percent of

[4] In most industrialized countries, nationals make up at least 50 percent of the workforce (Winckler 2000, p. 29).

these people are of other Arab nationalities; about 40 percent are from India, Pakistan, Nepal, Bangladesh, Sri Lanka, and the Philippines. The remaining 20 percent include Iranians and a wide mix of people from Western countries, most from the English-speaking world.

The government of Qatar has initiated several programs of "Qatarization" to increase the number of Qataris in the workforce. According to Qatari Labor Law No. 3 of 1962, a vacant position must be offered first to a Qatari national and, if it cannot be filled by a Qatari national, then to a non-Qatari Arab,[5] followed by a non-Arab foreigner (Article 10, as reported in Winckler, 2000). In the early 1970s, a decision was made to Qatarize administrative posts in the government sector. By the 1990s, the proportion of top school administrative positions held by Qataris reached 96 percent (Ministry of Education, 1996). In May 1997, the Emir decreed that private-sector businesses had to ensure that at least 20 percent of their employees were Qatari nationals (Winckler, 2000, p. 28). According to an industry-wide Strategic Qatarization Plan, the Qatarization target was a 50 percent national workforce in the energy industry by the end of 2005. This plan went into effect on June 1, 2000, and is the most comprehensive Qatarization plan in the history of the state. Employers compete for Qataris who have developed specific skills in high-demand fields such as engineering and finance.

According to the 2004 census, the Qatari labor force comprises 15 percent women (Planning Council, 2004, Table 13), which is an increase from 1980's 7 percent. Of all employed women, Qataris account for 24 percent; among men, the corresponding percentage is 9 percent (Planning Council, 2004, Table 13). Workplace segregation of women and men is still common in the education and government sectors, but is much less so in the private-sector workplace. Her Highness Sheikha Mozah has given prominence to the role of Qatari women and has fostered an environment that encourages them to meet their social obligations and participate in public life.

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[5] Qatar has implemented several attempts (e.g., labor agreements with other Arab governments) to "Arabize" the foreign labor force out of fear that the country was about to lose its Arab and Islamic character and because of language barriers with non-Arab workers (see, e.g., Winckler, 2000).

Qatari women who work outside the home have been traditionally employed as teachers, nurses, or clerks. However, many women now serve as senior professionals in government service and private business. Women are particularly well represented in the field of education: 80 percent of employed Qatari women work for the Ministry of Education (Peninsula, 2003). The current Minister of Education, Her Excellency Sheikha Al Mahmoud, was appointed as Qatar's first female cabinet minister in 2003. She was also the first woman to hold the rank of cabinet minister in any of the Gulf States. Qatar University (QU) also employs many Qatari women; in 2003, Dr. Sheikha Abdulla Al Misnad became the first woman to be appointed president of QU.

Education

History

Before oil was discovered, there was no formal education system in Qatar. Instead, some children memorized passages from the Qur'an and learned to read and write in a *kuttab*, an informal class taught in mosques or (usually the case for girls) homes by literate men and women knowledgeable about Islam (U.S. Library of Congress, 1994). In the early 20th century, there were 12 *katatib* (the plural form) in Qatar in which both boys and girls were educated. The move toward a broader and more comprehensive form of education began with a school for boys in Doha, opened in 1948, which had classes in Islamic studies, arithmetic, geography, Islamic history, Arabic, and English. Government support of this school began in 1951 and was expanded to three other schools for boys in 1954.

The first public school for girls, which opened in 1956, originated from a *kuttab* for girls established in 1938. Support for the public education of girls was greatly influenced by a prominent Qatari scholar, Sheikh Al Mani, who issued a fatwa (religious proclamation) in 1957 declaring that girls' education was consistent with Islam (Al-Misnad, 1985). Many more boys than girls attended school in the 1950s, but by the late 1970s, attendance was nearly equal, with girls outperforming boys academically (U.S. Library of Congress, 1994). Before the 1970s,

boys and girls also studied different subjects. In recent years, however, the curricula for government-sponsored boys' and girls' schools have been the same. In addition to the publicly funded government schools, there are three types of private schools in Qatar. One type, called "community" schools, is geared toward the children of expatriates in Qatar (including Indians, Pakistanis, British, and Americans); schools of this type are sponsored by the embassy of the relevant country. The second type, called "international" schools, follows a foreign curriculum but is not under embassy sponsorship and often enrolls the children of both Qataris and expatriates. The third type, known as "private Arabic" schools, follows an Arabic curriculum and is geared to Qataris and other Arabs who want to follow the traditional Qatari curriculum in a private school setting.

The Ministry of Education

Education regulations drafted in the mid-1950s led to the establishment of one of the first ministries in Qatar, the first Ministry of Education, called at the time Wizarat Al Maarif. The Egyptian system of education served as a model during the early years of public education. From the mid-1950s to the mid-1960s, the Ministry adopted curricula and textbooks from Egypt and other Arab countries (Saudi Arabia, Jordan, Iraq, Syria, and Lebanon). Qatar began producing textbooks locally in 1965, but most of these were compilations of materials drawn from other Arab texts rather than being specifically designed for Qatari students (Al-Kobaisi, 1979).

Today, government-funded education is provided free to Qatari children, as well as to eligible expatriate children whose parents are employed by the government. This system has experienced many successes in a short time. Literacy rates in the country are high; illiteracy among Qatari nationals over ten years of age declined from 13.6 percent in 1997 to 9 percent in 2004 (Peninsula, 2004c).

The highly centralized Ministry of Education has continued to oversee all aspects of public education and many aspects of private education. In addition to housing the Offices of the Minister of Education and Undersecretary, the Ministry houses four sections—Administrative and Financial Affairs, Educational Affairs, Cultural Affairs Sector,

and Educational Planning and Curricula Affairs—and 18 departments (Ministry of Education, 1996).

In 2000, the Ministry employed 16,790 people (see Table 2.2). Of these, Qataris outnumbered foreigners by almost two to one and held the majority of administrative positions. Almost 60 percent of Ministry staff held non-teaching positions: 3,901 people held administrative positions (both at the Ministry and the school level, for approximately 23 percent of the total Ministry staff), 6,039 held lower-level staff positions (including laborers, drivers, office boys, guards, and filing clerks, for about 36 percent of the total), and 6,850 held teaching positions (about 41 percent). Relative to the number of pupils in Qatar, the number of people in the Ministry seems inordinately large.[6]

Other government offices also administer education-system functions: the Ministry of Public Works (school-building construction and maintenance); the Real Estate Department (school-building land);

Table 2.2
Number of Ministry of Education Employees, by Type and Nationality, 2000

Type of Employee	Qatari	Non-Qatari	Total
Teachers	4,731	2,119	6,850
Administrators			
Schools	2,278	90	2,368
Ministry departments and sections	1,089	444	1,533
Laborers and Drivers			
Schools	1,046	1,388	2,434
Ministry departments and sections	1,378	2,227	3,605
Grand total	10,522	6,268	16,790

SOURCE: Ministry of Education, 2001, pp. 75–104.

[6] The education ministries in New Zealand and Iceland provide two contrasting examples. According to the New Zealand Ministry of Education's website (http://www.minedu.govt.nz), New Zealand's ministry employs 3,123 people at the ministry level and has a student population more than ten times the size of Qatar's. In Iceland, the number of students enrolled in government schools is approximately 65,000—just shy of the enrollment in Qatar—but Iceland's education ministry employs only 80 people.

QEWC (utilities); the Ministry of Civil Service Affairs and Housing (conferment of civil-service status upon teachers and administrators); the Ministry of Social Affairs and Labor (social assistance for students); the Ministry of Public Health (medical treatment and medicine); and the Mechanical Equipment Department (student transportation) (Ministry of Education, 1996, p. 34).

Government Schools

The school year runs from early September to mid-June and is divided into two parallel semesters of 17 weeks each. Students attend school about five hours per day.[7] Students are assigned to schools based primarily on geographic location. The country is divided administratively into ten municipalities, which are in turn divided into smaller zones. The majority of students and schools are in the capital city of Doha and its suburbs.

Since 1958, three levels of general education have been provided: primary (grades 1–6), preparatory (grades 7–9), and secondary (grades 10–12). Girls and boys attend separate schools in the government (i.e., public) system. Teachers are the same gender as the children in the school except in what are known as the "model" schools, which were developed in the late 1970s to ease the transition from home to school for young boys, as well as to provide more employment opportunities for female teachers. A model school is a boys' primary school of four grades (1–4) in which both the teaching staff and the administration are female. The first three model schools opened in 1978, and their success led to a five-year plan to implement this type of school system-wide (Ministry of Education, 1996, p. 22). In the 2000–01 school year, 12,119 students were enrolled in model schools (Ministry of Education, 2001, p. 111).

Primary schooling in Qatar begins with grade 1, at age 6. As of 2001, when the RAND team first visited Qatar, the kindergarten level was not established in public education, and only private schools offered

[7] The school day and year are somewhat shorter in Qatar than in other countries. Whereas Qatari students attend school for 160 days per year (with about 120 days devoted to instruction), the average in 40 other countries is 194 days.

preschool programs and kindergarten. Preparatory schools build on the fundamentals introduced in the primary grades. Secondary schools begin to move students into more-specialized streams of education. The first year of secondary education in Qatar is the same for all students, and it is in grade 11 that students choose to follow either the literary/arts or the scientific track. In addition to general secondary education, there are a few alternative educational options, including a secondary school of commerce, a secondary technical school, and a religious institute.

Student promotion to the next grade level is determined by end-of-year examinations developed by a centralized committee of teachers. As of 1996, the average required passing score for all subjects was 50 percent (Ministry of Education, 1996). Students who pass the high school exit examinations receive a certificate attesting to their completion of the secondary stage of education. Students must have this certificate to proceed to higher education in Arab universities.

In the 2000–01 school year, there were 220 public schools, representing a 7 percent growth in the number of schools over six years (see Table 2.3). Of the 71,325 students attending these schools in 2000–01, 63 percent were Qatari, and the rest were foreign students eligible for free government schooling because their parents were employed in Qatar's government.

School administration includes a core staff of a principal, deputy principal, secretary, social worker, supervisor, and storekeeper. Schools with more than 20 classes have a second deputy principal and a second supervisor (Ministry of Education, 1990). Since Qatarization was

Table 2.3
Number of Government Schools, Teachers and Administrators, and Students, 1990–2000

Academic Year	Schools	Teachers and Administrators	Students
1990–91	192	6,786	63,596
1995–96	207	7,871	66,159
2000–01	220	9,218	71,325

SOURCE: Ministry of Education, 2001, p. 353.

instituted in the early 1970s, Qataris have filled all new administrative posts and vacancies. In 1991, Qataris held 96 percent of the administrative positions in schools (Ministry of Education, 1996, pp. 31–32).

Teachers are hired by the Ministry and assigned to schools. There are relatively few male Qatari teachers, suggesting that the profession does not appeal to Qatari men. The majority of teachers at boys' schools are men recruited from other Arab countries and elsewhere around the world. In contrast, most of the teachers at girls' schools are Qatari. The Ministry supervises teachers, evaluates them, and offers some limited professional development programs.

The Ministry mandates that a specific curriculum be taught at each grade level, and Ministry-developed textbooks are used in all classes. It has considered curriculum development to be the best approach for reforming education (Ministry of Education, 1996). In grades 1 and 2, all students are taught religious studies, Arabic, mathematics, science and hygiene, art, physical education (PE), and English. New subjects are added in the grade 3 and beyond, as illustrated in Table 2.4.

Private Schools

The Ministry provides some assistance for private schools, but their funding is primarily private. As of 2001, preschool and kindergarten were available only at private schools.

In 2000–01, 35 percent of all students in Qatar attended private schools (see Table 2.5). Approximately one-fourth of these students

Table 2.4
Ministry of Education Curricula, by Stages of Education, 1996

Primary (grades 1–6)	*Grades 1–6*: Arabic, Religious Studies, Mathematics, Science and Hygiene, Art, PE, English *Grades 3–6*: Social Sciences
Preparatory (grades 7–9)	Arabic, Religious Studies, English, Mathematics, Science and Hygiene, Sociology, Art, PE, Home Economics
Secondary (grades 10–12)	*General*: Holy Qur'an and Religion, Arabic and Literature, English, Mathematics, Physics, Chemistry, Biology, History, Geography, Art, PE, Home Economics *Depending on concentration*: Civics (grades 10–11), French (grades 11–12), Geology (grade 11), Sociology (grade 11), Philosophy and Psychology (grade 12), Methods of Research (grade 12)

SOURCE: Ministry of Education, 1996, pp. 36–37.

Table 2.5
Students in Public and Private Schools, by Nationality and Stage of Education, 2000–01

	Number of Students			Percentage in Private School
	Public School	Private School	Total	
Qataris				
Primary	24,162	5,699	29,861	19
Preparatory	11,528	1,451	12,979	11
Secondary	9,538	874	10,412	8
Total	45,228	8,024	53,252	15
Non-Qataris				
Primary	13,761	18,843	32,604	58
Preparatory	6,530	6,779	13,309	51
Secondary	5,806	4,425	10,321	43
Total	26,097	30,047	56,321	53
Total in School				
Primary	37,923	24,542	62,465	39
Preparatory	18,058	8,230	26,288	31
Secondary	15,344	5,299	20,643	26
Total	71,325	38,071	109,573	35

SOURCE: Ministry of Education, 2001, pp. 62, 68, 275–276.

attended private Arabic schools; the remaining students attended community schools. Non-Qataris were more likely than Qataris to attend private schools: 53 percent of non-Qatari students attended private schools, compared with 15 percent of Qatari students. In comparison, approximately 10 percent of students in the United States are enrolled in private schools (National Center for Education Statistics, 2004, Tables 39 and 58), and private school enrollment in many small European countries is less than 5 percent.[8] Between 1994 and 2000, the number of students attending private schools in Qatar increased by about 20 percent.

Private Arabic schools follow the same curricula and course books as their public counterparts. The Ministry regulates and monitors the

[8] For example, private school enrollment is 5 percent in Luxembourg, 4 percent in Finland, and 3 percent in Sweden. Technical and vocational students generally constitute more than half of students attending private schools in these countries (Eurydice, n.d.).

operations of both the public schools and these private Arabic schools in a similar way but requires smaller class sizes for the Arabic schools.

The Ministry also exercises some regulatory authority over the other two types of private schools—community and international schools. All curricula and textbooks for these schools must be approved by the Ministry. All prospective private school owners must apply to the Ministry for a private school license, and the Ministry must approve the name of the school. These schools must also meet Ministry regulations relating to health, record keeping, library acquisitions, employee appointments, and acceptance of donations or grants from individuals and corporations. Every school must also submit to the Ministry a statement of expenditures and a report of extra student fees for approval, as well as an annual report at the end of each school year. In addition, all are subject to Ministry inspection.

Postsecondary Education

There are several options for higher education in Qatar. One of them is the publicly funded Qatar University (QU), established in 1977. When QU opened, it had four colleges: Education, Humanities and Social Sciences, Science, and Sharia and Islamic Studies. In 1980, the College of Engineering was established, followed, in 1985, by the College of Administration and Economics. In 2002, nearly three-fourths of the 8,621 students at QU were female (Qatar University website: http://www.qu.edu.qa).

Before 2000, the College of Education offered a bachelor's degree in various subjects, including general education, and most Qatari public school teachers trained there. Since 2000, general education degrees are no longer offered, although students can still pursue a bachelor's degree in arts or physical education or receive a diploma in early childhood education or special education. A new post-graduate teacher-training program is in development as part of Qatar's education reforms.

To supplement the educational opportunities provided by QU, Qatar Foundation established Education City in 1997.[9] Education

[9] In 1997, Virginia Commonwealth became the first international university in Qatar, beginning its operations with a program distinct from that of its home campus. In 1999, Weill

City houses branch campuses of several international universities: the Virginia Commonwealth University School of the Arts, the Weill Cornell Medical College, Carnegie Mellon University, Texas A&M University, and Georgetown University School of Foreign Service. Outside of Education City, the College of the North Atlantic offers one-, two-, and three-year programs of study in business, engineering, information technology, and health sciences. It established a branch campus in Doha in September 2002 through an agreement between the State of Qatar and the College of the North Atlantic, Canada. The CHN University Netherlands also offers undergraduate programs in hospitality and tourism management.

Prior Efforts to Improve Quality

Beginning in the 1980s, the Qatari government and public became increasingly concerned about the quality of the education system. Leaders began to recognize that the welfare payments, cultural traditions, and poor education system were jointly contributing to a weak work ethic among Qataris (Cordesman, 1997). This lack of a strong work ethic made Qatarization more challenging.

Several studies recommended improvements to the system. A UNESCO (United Nations Educational, Scientific and Cultural Organization) study in 1990 (Ministry of Education and UNESCO, 1990) highlighted a number of areas for improvement, including problems directly associated with teachers: high turnover; low status of the teaching profession among Qatari nationals, especially men; and the differential treatment of Qatari and non-Qatari teachers in the schools.

In 1996, the Ministry established an in-country committee to review all aspects of the education system. This committee conducted a comprehensive study of teachers, students, and administrative personnel in a sample of 21 Qatari schools (Ministry of Education, Higher Committee for Oversight of the Politics of Education, 1996). This

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Cornell Medical College became the first branch campus, offering a curriculum equivalent to that of its home campus. Virginia Commonwealth changed its operations to the branch campus model shortly thereafter, and all subsequent institutions have followed this model. Education City was officially inaugurated in 2003.

study confirmed the findings of the UNESCO study and made recommendations to increase teacher performance and satisfaction and to improve student achievement. Several new initiatives were introduced in the 1990s (both simultaneously with and in response to the committee study) to improve literacy, to introduce educational technology into classrooms and computers into central education administration, to develop school libraries, and to diversify secondary education (Ministry of Education, 1996). Diversification was achieved by splitting the scientific track into physics/mathematics and chemistry/biology and offering new options for students, including agricultural education and applied education (e.g., postal services technology, typing technologies, electronic photography technology, hotel services, nursing).

Al-Horr (1998) surveyed influential Qataris from several segments of society to gather their opinions on problems in education and suggestions for improvement. Respondents concurred that students were not learning the right skills in school and identified teachers as a key source of the problem. The study noted that teachers were not qualified to teach and relied on very traditional practices. According to the survey, teachers did not attempt to improve their performance at school, preferring to provide private tutoring outside the classroom. In addition, the status of teaching was very low, and information on other countries' teaching experiences to inform the Qatari experience was lacking. Survey respondents also noted problems with school administration. The study concluded that administrators were not taking an active role in developing or carrying out strategic plans and that their role had been limited to routine and tedious tasks. Respondents recommended that a vision and concomitant goals for education be established and that practical programs for achieving these goals be specified.

In response to some of these concerns, three new schools were opened in 1999: one vocational school and two scientific secondary schools. The vocational school, called the Secondary School for Industrial Technology (SSIT), was organized as a Ministry of Education school. With the help of GTZ (Gesellschaft für Technische Zusammenarbeit, or German society for technical cooperation), SSIT built a respected vocational curriculum focusing on technology and applied sciences. The two scientific secondary schools, one for boys and one

for girls, were followed in successive years by two scientific elementary schools (often referred to as pilot schools) and two scientific preparatory schools. Collectively, these schools are known as the scientific complex schools. Within each scientific complex, students progress through academically and pedagogically connected primary, preparatory, and secondary schools for the duration of their education. The language of instruction is English, and the curriculum emphasizes science.

The scientific complex schools were intentionally designed to be independent of the Ministry, although the Ministry retained control of their budgets. Principals and teachers enjoyed a much greater degree of operational and instructional freedom than did their colleagues in traditional Ministry schools. The complex schools, for instance, could select their teachers, something traditional schools could not do; and teachers were allowed to choose teaching materials and methods and curriculum details. Collaboration among teachers was common. These schools actively engaged parents and the larger community in their activities. For example, local businesses have hosted graduation ceremonies, and students have completed internships with local businesses, such as Qatar Petroleum. To be effective in the new teaching environment, teachers were trained by British, Canadian, and U.S. experts.

Enrollment in the scientific complex schools is selective. For instance, to be admitted to the scientific secondary school for girls, students must score 90 percent on the examination taken at the end of preparatory school. As a result, the complex schools enroll the nation's most able students, and this selectivity may contribute to the high demand of parents and students for places in these schools. It was not known whether this education model would be equally effective and equally in demand if it were offered to a broader range of students.

Mixed Success at Reform

Although introduction of the scientific complex schools represented a clear move toward reform, the vast majority of Ministry schools remained unchanged, and the public system continued to be plagued with problems. Many students sought additional tutoring, and many were held back each year. On average, those who did graduate were not well prepared for postsecondary education or the workplace.

In 2000–01, 13 percent of Qatar's secondary students failed the end-of-year examinations (see Table 2.6). Of those who failed, about half also failed a late-summer retest and had to repeat a grade, with boys much more likely to repeat than girls. In the United States, only about 2 percent of grade 9–12 students repeat a grade (National Center for Education Statistics, n.d.). The repeat rate remained high in Qatar despite the proliferation of private tutoring. In 1995–96, about a third of students in Ministry schools took private lessons (Ministry of Education, Higher Committee for Oversight of the Politics of Education, 1996).

Graduates of the K–12 system are not well prepared for postsecondary education. The secondary school exit examination requires students to get only 50 percent of items correct to achieve a passing score. Yet according to Ministry data, about 20 percent of students failed the examination in 2001. Furthermore, a significant proportion of the students who passed the high school exit examination did not perform well on QU's entrance examinations. In 2001, only 47 percent of the students passing the high school exit examination achieved high enough scores on the entrance examinations to be accepted in at least one of QU's colleges. The majority (63 percent) of these successful entrants were women.

Table 2.6
Students Failing End-of-Year Examinations, by Stage of Education, 2000–01

Education Stage	Males	Model School Males	Females	Total	Percent Failing
Primary	753	363	626	1,742	4.5
Preparatory	946		467	1,413	7.8
Secondary, general	1,142		778	1,920	13.0
Secondary, all schools	1,275		778	2,053	13.0
Total	2,974	363	1,871	5,208	7.3
Percent failing	13.0	3.0	5.1	7.3	

SOURCE: Ministry of Education, 2001, p. 66.

NOTE: Students who fail end-of-year examinations and are to repeat a grade may change their status by retaking and passing the examinations before the next school year begins. In the secondary grades, as many as half of those who fail the initial examinations are successful on retest and avoid repeating a grade.

Even those admitted to QU were not necessarily prepared for university-level study. Several QU colleges (Engineering, Science, and Business Administration) had developed a Foundation Year program to help students who were inadequately prepared for university study (Al-Misnad, 2001).

Neither were Qatari students prepared to study abroad. There was an Academic Bridge program to prepare Qatari high school graduates for study at foreign universities, including those in Education City. This program's goal is to prepare students to study in English at the post-secondary level by providing language training as well as instruction in mathematics, science, and study skills. Only a quarter of students who scored 90 percent or more on the high-school exit examinations scored at level 3, 4, or 5 on the Academic Bridge program's entrance examinations (Coordinating Committee, 2001). Students who obtain a score of 5 (on a scale of 1 to 5) are considered eligible to compete for spots in the most selective English-speaking universities in the world.

In addition to needing remedial education prior to entering college, graduates of the school system appear to need further training before they are ready for employment. Employers, such as Qatar Petroleum, have established extensive training programs to enable secondary school graduates to perform technical, clerical, and administrative jobs. The training includes English-language skills.

The leaders in Qatar have continuously encouraged their citizens toward greater participation in society and greater representation in the workplace. Over a 20-year period, various reforms were implemented, but their effect on the overall system proved minimal. Recognizing that more-drastic action was needed, the Qatari government asked RAND to analyze the education system and propose reform options to address the system's shortcomings. Their vision was to build an education system that would provide young people with the skills needed to participate more fully in the nation's economic and social life. The new education system was also to be consistent with other initiatives for social change, such as the move toward increasing democratic rule and wider opportunities for women. The analysis that RAND conducted is described in the next chapter.

CHAPTER THREE

Analysis of Qatar's Education System

As discussed in Chapter One, RAND performed a background analysis of the strengths and weaknesses of Qatar's education system as an essential precursor to formulating possible options for improvement. We begin this chapter by discussing both the procedures used to gather information about the Qatari system and the initial RAND assessment, which partially confirmed the prevailing view in Qatar: The nation's schools were failing to prepare students for modern life. We also discuss the problems that were identified along four broad themes: system integration, incentives and accountability, resource allocation, and curriculum and pedagogy. In addition, we discuss some strengths upon which any new initiatives could build. The main conclusion from our analysis was that the existing institutional structures were unlikely to produce the kinds of changes desired and that a system-changing reform was needed.

Approach

After an initial meeting with Qatari leadership in May 2001, RAND proposed a study to

1. Describe and understand the Qatari school system
2. Identify problems with the system
3. Recommend approaches for improving the performance of schools and students within the system.

The Emiri Diwan, the working palace, was to sponsor the study. To meet the sponsor's needs, we proposed a relatively short scoping study rather than a more comprehensive, lengthy evaluation process. This study would take advantage of recent evaluations of the system and also proceed as an interactive process, with the client providing feedback throughout.

From the very first meetings with the Qatari leadership, it was apparent that there was a high level of commitment to the reform effort and a willingness to consider innovative solutions. The Qatari leaders and RAND agreed that using incentives to promote behavioral change was preferable to mandating change, and that change had to involve reworking the structure of the education system. These shared perspectives and the leadership's willingness to commit the necessary resources formed a strong foundation for the project.

The scoping study was carried out from September 2001 through May 2002. RAND began on-site investigations in October 2001, traveling to Doha each month throughout the study period. The interdisciplinary team consisted of nine researchers with wide expertise in education research and policy analysis (including economics, anthropology, clinical psychology, child policy, education reform, and Middle East studies).

Throughout this period, RAND collaborated with the Coordinating Committee convened by the Qatari leadership in overseeing the project. The Coordinating Committee included high-ranking decisionmakers (both Qatari and non-Qatari) and played a vital role in this early period. The committee arranged tours and meetings with a wide range of constituents and, most important of all, helped the research team learn about and understand the social and cultural context in Qatar.

The research team gathered information about the system in three ways: by observing schools, government ministries, and other workplaces; by interviewing over 200 individuals; and by collecting and analyzing relevant documents. At the end of each day spent gathering data in Doha, the Coordinating Committee members and the RAND team met to discuss the observations and interviews in order to clarify

information and discuss overall perceptions. This process enabled the Coordinating Committee to provide significant input to the study.

Observations

RAND visited schools, government ministries, and other work sites in Qatar. A representative from the Ministry accompanied RAND team members on all school and Ministry visits to facilitate introductions and provide contextual information. The team included some Arabic speakers. In addition, interpreters sometimes accompanied the team to translate meetings and discussions.

RAND conducted observations at approximately 15 schools: boys' and girls' schools at all three levels (primary, preparatory, and secondary), Ministry schools, and private institutions. Typically, these visits included a meeting with school administrators, followed by a general tour of the grounds and classroom observations. The team also held interviews or focus groups with teachers and students. Some visits included meetings with parents as well.

The school tours provided the opportunity to note the design and physical condition of the buildings, classrooms, and non-classroom areas. Classroom observations provided information on the physical size and layout of classes, number of students in the rooms, teachers' pedagogical styles, students' responses to these styles, and levels of student and teacher interactions. In cases where English was the language of instruction, observers could also get a sense of the overall quality of instruction.

RAND also visited government offices—where the bulk of the Qatari workforce is employed—and private (or government-owned semi-private) companies. The tours provided an overview of the working environment in Qatar. For example, the team was able to develop impressions about the penetration of computers and other technologies, the structure and character of office buildings and personal office spaces, and the ebb and flow of work over the workday (which typically lasts from 7:00 a.m. to 2:00 p.m. in the government ministries).

Interviews

The RAND team conducted nearly 200 semi-structured interviews, individually or in small groups, with key people responsible for and interested in the success of the education system. The interviewees were school personnel, students, parents, officials at the Ministry of Education and other ministries, QU staff and students, and employers.

The interviews were held under conditions of anonymity and focused primarily on gathering information about the perceived strengths and weaknesses of the education system, barriers and untapped resources for change, ideas for improvements, and the like. Although most of the key decisionmakers and employers could be interviewed in English, most Ministry interviews were conducted in Arabic using translators.

Documentation

RAND also gathered relevant documents and data from the Ministry, including student test scores, curriculum materials, and regulations. The only available test data were scores from the high school exit examinations taken by all secondary students in the Ministry system. These data were analyzed to assess student achievement by region, nationality, and gender. Apart from these test scores, only limited descriptive information on students, teachers, schools, and administrators was available. In addition, the team consulted earlier evaluation reports on the Qatari school system.

Analysis

At least two members of the RAND team were present for each observation or interview, and they recorded data and information in extensive field notes. Between visits to Qatar, one team member wrote the initial draft field notes, and others contributed corrections and additions to this draft. The entire team used the finalized version of these notes along with documentary evidence to analyze the existing system. In the course of the analysis, the team identified a number of strengths and weaknesses within the system.

Confirmation of System Weaknesses

From the beginning of RAND's assessment of the Qatari education system, it was apparent that many people were highly dissatisfied with the current state of affairs. Even though prior studies had analyzed the system and recommended changes—some of which had been implemented—the same problems continued. Problems persisted, in part because the attempts to alleviate them were fragmented, rather than systemic, and were not part of an integrated vision for the education system. The prior reform efforts also lacked detailed implementation strategies. Not surprisingly, with each study, each proposed reform, and each failed reform attempt, constituents throughout the system grew more and more frustrated with the lack of change.

For its part, the Ministry's public education system had achieved its initial purpose of providing free education to all Qatari children. It also served a societal purpose in providing abundant civil service jobs within both the Ministry and the schools.[1]

While achieving the goal of free, standardized education is commendable, it is not sufficient for supporting the far-reaching societal changes that the Qatari leadership aims to bring about. Overall, the education provided was of low quality, as attested by the proliferation of private tutoring and the high rate of grade retention. The curriculum was outdated. Also, as discussed in Chapter Two, many students graduating from the system did not perform well in either postsecondary education or the workplace and often needed remediation. Very few graduates gained entry into prestigious postsecondary institutions abroad or into the most selective programs at QU. College officials and employers alike complained that graduates were not able to converse or write well in English, perform basic mathematics and accounting tasks, or use computers and other technology. Interviewees also reported that graduates lacked initiative and leadership skills.

RAND's analysis identified a number of problems, briefly described in the following subsections, that underlay poor system performance.

[1] Civil service growth in this sector also stems from the fact that education tends to be one of the few careers that the community has historically sanctioned for women. So, as more women enter the labor force, the education sector is likely to expand.

Lack of Vision or Goals for Education

When the Ministry was founded in the 1950s, the emphasis was on building a system that would provide free education to a largely illiterate population. The system design was based on the highly centralized Egyptian model. Scant attention was given to considering other models or thinking about ways to build a high-quality education system that responded to stakeholders' needs.

Piecemeal Growth Without View of Whole System

Over its 50-year history, the Ministry expanded without questioning its structure or developing guiding principles for its operation. It added departments, procedures, rules, and processes in a piecemeal manner without considering the system as a whole. The Ministry also lacked purposeful organizing principles. It expanded to meet problems as they arose, failed to evaluate new structures or processes, and overlooked opportunities to design coherent strategies and goals and align them with structure and procedure.

Hierarchical Organizational Structure

The Ministry's hierarchical structure did not foster innovation or change. Employees worked in isolation within their assigned department and waited for orders to come from above. As the employees executed the orders, any questions that arose were directed back up the chain. Answers could be a long time coming and were often insufficient. None of the Ministry employees interviewed appeared to understand the system as a whole.

Unclear Lines of Authority

Parents complained about not knowing who in the Ministry might listen to their problems or answer their questions. They reported that they wrote letters to newspapers to complain, since they thought that attempts to identify someone within the Ministry who would listen and have the authority to act would be futile.

Little Communication with Stakeholders

With each department functioning in isolation, it was impossible for the Ministry to develop strong internal ties or relationships with external organizations. Employers noted the absence of feedback mechanisms for informing the Ministry about the quality of its graduates or offering ideas for improving the education system.

Top-Down Control of Curriculum and Teaching

Teachers had to follow Ministry mandates on curriculum and teaching. The Ministry provided all textbooks; it also provided a curriculum guide to which teachers had to adhere and in which they had to record minute details of each lesson taught on a daily basis. These records were reviewed by Ministry inspectors to ensure compliance with the national curriculum. This recording process took up to two hours each day. As one teacher remarked, "respectable teachers are treated like kids in kindergarten." Teachers feared the judgment of Ministry inspectors but had no outlet for their own concerns or suggestions.

Outmoded, Rigid Curriculum

The Ministry incrementally updated the curriculum on a rigid schedule, with each subject reviewed and revised at one grade level each year. Therefore, a grade 5 science text, for example, would be revised about every 12 years. Teachers complained that these updates were too infrequent to keep pace with developments in subject matter and pedagogy. One primary school teacher noted that the curriculum had not changed since she had been a student at the school.

Teachers who chose to alter the curriculum (e.g., provide different examples or exercises) had to spend their own money on any additional materials and still had to teach the lesson plan for that particular day. Creativity was implicitly discouraged.

In addition, there were too many subjects to cover in the time allotted, which could lead to superficial content coverage. Some teachers even reported completing the students' class work themselves, on their own time, in order to meet the strict timetable.

Unchallenging Curriculum

Students expressed boredom in the classroom, where teachers arrived in turn to lecture to them. We noted few opportunities for teacher-student interaction. Teachers confirmed that students had few opportunities to develop or display their talents and abilities. Teachers were unable to take the time to challenge bored students or help those who needed extra attention. Parents indicated that their children received no feedback, apart from examination scores administered at mid-term and the end of the semester. With the emphasis on rote learning and memorization, it is not surprising that parents and teachers alike complained about students' lack of motivation.

Lack of School Autonomy

School administrators had little authority. The Ministry assigned principals to buildings, assigned teachers and other staff to schools, and provided furniture, equipment, textbooks, and all other instructional materials. Principals were able to evaluate teachers, but only in conjunction with Ministry inspections. School employees also expressed frustration at their inability to influence Ministry policies or procedures.

Lack of Accountability

Although teachers were held accountable for executing the centralized curriculum, no one was held accountable for student performance. There was no attempt to link student performance with school performance. Teachers and administrators had no sense of whether they were increasing the students' knowledge or improving their skills. The Ministry had also failed to enunciate system-level goals for student outcomes.

Lack of Investment in Essential Elements

Even though Qatar is a wealthy nation, its resources were not flowing to the schools. Within the Ministry system, resources were used primarily to support the huge workforce, which numbered nearly 17,000 in 2000. Many school buildings were old and deteriorating to the point of being dangerous. Classrooms were overcrowded, with 40 to 50 students crammed side by side into spaces designed for fewer than half

this many. Schools lacked modern equipment, such as computers and other instructional technologies (a few schools had one computer and one printer for the whole school), as well as basic supplies. Teachers repeatedly complained of having to use their own money to purchase instructional materials for their classes. The Ministry-provided materials often arrived late, forcing schools to make do with what was at hand—for example, photocopying textbook chapters.

Low Pay and Poor Incentives for Teachers

Teacher salaries in Qatar were comparatively low. Most male teachers were expatriates, and while their average salaries were higher than those of teachers in Saudi Arabia, they were 20 percent lower than those of teachers in other GCC countries. These low wages raised questions about quality. Even if expatriate teachers were of higher quality than their salaries might indicate, they were working on a contracted basis that led to perverse incentives. Their contracts were renewed on an annual basis, fostering a continuous state of apprehension among them. And although most contracts were renewed, many expatriate teachers reported that they refrained from disciplining Qatari students for fear of offending a family with influence over hiring decisions. To supplement their low salaries, these teachers offered private tutoring outside of school, despite prohibitions against it. It has been suggested that when teachers come to rely on supplemental income from tutoring students who need extra help, they may be less inclined to provide high-quality instruction in the classroom.

In the past, the Ministry provided incentive payments in an attempt to attract Qatari men to join the teaching profession. However, given the alternative—less-demanding work in higher-status government jobs—it is easy to understand why this approach failed. The Ministry then mandated that all male Qatari job applicants must spend time teaching in schools before obtaining a position in its central bureaucracy. This policy resulted in teachers who were unprepared for and dissatisfied with their teaching posts.

Poor Teacher Allocation Policies

Teachers could be moved from school to school with little advance notice and no consultation. More alarming yet, teachers with poor performance reviews could be "demoted" to lower grades—a policy that reveals a stunning lack of understanding about the specialized type of teachers needed at the primary level. The combination of these policies and shortages of qualified teachers in certain fields meant that teachers were often assigned to teach subjects for which they had little or no training.

Lack of Training and Professional Development

Teachers did not appear to receive the training they needed. At the preservice level, teachers trained at QU were taught to rely on lecturing to teach the centralized curriculum. Once the teachers were assigned to schools, they had few options for professional development and any training provided was often disconnected from reality. For example, some teachers complained that they were trained to use PowerPoint (which they enjoyed) in their classrooms but had no computers in their schools.

Similarly, administrators reported that the only professional development they received focused on how to make an organized filing system. Overall, the Ministry appeared deficient and disorganized in its professional development offerings and unable to recognize existing opportunities for training. For example, Ministry inspectors regularly visited teachers, but their job was to ensure compliance with the curriculum rather than to support or mentor teachers who needed improvement.

Positive Aspects of the System

In addition to identifying weaknesses in the education system, the RAND team identified positive characteristics that could be used to build a better system.

Familiarity with International Developments

While revealing substandard curriculum and instructional practices in schools, the RAND analysis also found that the Qatari leadership and many school administrators and teachers were familiar with international developments in curriculum and pedagogy. This familiarity suggested that the leadership would be supportive of internationally benchmarked curriculum and pedagogical changes as long as they were respectful of Qatari traditions and culture.

Enthusiastic, Committed Staff

Many teachers and administrators appeared highly motivated and enthusiastic. They and their students expressed a desire to play a more active role in the learning process.

Many teachers provided thoughtful and passionate suggestions for improvement. They recognized, for example, that students have different needs and that instruction should be appropriately differentiated to meet them. But they lacked incentives to innovate and opportunities for professional development that could help improve their teaching. The willingness of teachers to spend their own money on additional instructional materials demonstrated their commitment.

Desire for Autonomy and Change

School leaders wanted more autonomy and more authority over their schools. Principals reported that they would prefer to hire (and fire) their teachers and staff. Some had ideas for developing special programs to increase student motivation and participation, including programs to reduce class sizes. Many felt constrained by a lack of resources. The small amount of discretionary funding allocated to each school was often used for day-to-day necessities, such as repairing broken air conditioners or purchasing promised supplies that had not been delivered on time.

Acceptance of Alternative Schooling Options

Three developments that had recently occurred demonstrated to our RAND team the potential and demand for system change. The first of these was the establishment of the popular "model" schools, in which

female teachers teach boys in grades 1 through 4. This development suggested an acceptance of "different" schooling options.

The second such development was the vocational school, SSIT, which provides an option for boys who want to study a trade rather than pursue an academic curriculum. This school was founded under the guidance of a German technical advisory group—to our RAND team, a possible sign that outside expertise might be welcome.

The third development was the newly established scientific complex schools, two clusters of schools that provide a science-oriented curriculum to high-achieving boys and girls in grades K–12. Canadian education experts worked with Qatari teachers to develop curriculum and teach the courses in these schools. As discussed in Chapter Two, both the vocational school and the scientific complexes have had some autonomy from the Ministry.

Need for Structural and Systemic Change

Whereas the past reform efforts that had been tried appeared to be short on vision and on strategies for implementation, it seemed clear that reforming the Ministry of Education would be a Herculean task for even the most dedicated internal change agents. The overly centralized, hierarchical Ministry had constructed a complex, inefficient set of processes, rules, and regulations to exert control over the schools and the education agenda. This set of controls was designed to ensure compliance to the status quo and, as such, had no mechanisms either for monitoring or assessing performance or for implementing changes for improvement.

RAND's initial assessment of the Qatari school system indicated that a system-changing reform was needed. In policy parlance, a system-changing design is appropriate when it is determined that existing institutional arrangements are not producing desired results (McDonnell and Grubb, 1991). The solution to this problem is to form new institutions that expand the range of those providing education services. Bringing new institutions into the system alters the distribution of authority and responsibility. A key assumption behind a system-

changing design is that the new institutions will produce the desired results and, at the same time, motivate the established institutions to improve their performance. This type of change is risky, however, because the new entrants can generate a new set of problems. It may also be costly, because new institutions require start-up funds. Existing institutions might also have to bear transaction costs associated with changing their organizational norms and operating procedures to become competitive with new institutions. Finally, if established providers mobilize significant opposition, part of the cost of a system-changing design may end up being political.

The next step in the study was to develop alternative approaches for a system design that at least had the potential to improve education outcomes in ways envisioned by the Qatari leadership.

CHAPTER FOUR

The Reform Model

Based on the conclusion that a system-changing reform was needed, the Qatari leadership asked RAND to develop options for reforming Qatar's education system. The new system design had to be able to help produce Qatari student graduates who were ready to contribute to and participate in an increasingly democratic state and an international environment. Additionally, the design had to be appropriate for Qatar and had to build on the existing system's strengths while recognizing major challenges and constraints.

We begin this chapter by describing the three reform-model options that RAND developed, which were presented to the Qatari leadership in January 2002. We first discuss reform strategies—including curriculum standards, assessments, and professional development—that need to be addressed irrespective of a system's overall structural design. We then present the rationale for our three reform-model options—a Modified Centralized Model, a Charter School Model, and a Voucher Model—and describe their characteristics.

RAND was also asked, following the Qatari leadership's consideration of these three models, to elaborate on the design of and develop the implementation strategy for the second, Charter School Model, option. This chapter also presents the refined design—renamed the Independent School Model—and discusses its expected effects. For details on the development of the implementation strategy, see Chapter Five.

Options for Reform

The design task represented a unique challenge for the RAND team. It provided the opportunity to work closely with the client at every stage in the design of a new education system for an entire country and to bring RAND's analytic talents to bear. The challenge was to ensure that the new system would work in and for Qatar and, most important, be accepted by Qataris. In addition, the reform needed to promote and support the bold vision of the Qatari leadership. Thus, the team could not rely entirely on past experience or literature: The unique aspects of the project required an empirically grounded yet creative team approach.

RAND's prior work in designing effective education reforms suggested that there were two overriding concerns in making an education reform a success. First, the reform must modify the system and the system's behavior so as to enable the improvements needed in the schools and classrooms. Second, the reform's momentum must be sustained. Too many reforms dissipate after two or three years, ruling out the possibility of lasting effects. To achieve an impact and lasting change, a reform's momentum must be sustained for a decade or longer so that the reform becomes fully and deeply institutionalized as accepted practice (Berends, Bodilly, and Kirby, 2002; Glennan, Bodilly, Galegher, and Kerr, 2004; McLaughlin, 1990).

Based on a review of others' experiences, RAND determined that a reform's design must incorporate six essential elements regardless of its overall structure or the particular local context. As discussed in Chapter Three, the RAND analysis indicated that most of these essential elements were lacking in the Qatari education system. Thus, any reform approach for Qatar would have to incorporate these elements as basic upgrades to the current system. Moreover, the approach would have to appreciate the constraints of and obstacles posed by the current structure.

The six essential elements for the design were as follows:

1. *Begin with clear goals*. If policymakers are to guide effective education reform, they need a clear idea of what they want schools to

produce, how the existing system falls short, and what the viable options are for achieving needed improvement. At a minimum, an effective reform focuses on developing students' abilities to succeed in later education or the workforce. To this end, schools can improve students' skills in languages, information technology, communications, leadership, and analytic thinking. But an effective reform will seek broader social goals as well, most particularly the goal of preparing students to be responsible citizens. To advance social goals, schools can foster appreciation of the national culture, understanding and tolerance of other cultures, ethical behavior, and participation in civic life.

2. *Embody goals in clear standards*. An effective reform embodies the goals of education in clear standards that educators can understand and apply to their teaching. These are often codified as grade-by-grade curriculum standards in key subjects.
3. *Assess student and school progress*. To measure progress toward national goals, national or regional authorities must conduct objective measurements against the established standards and distribute the results of these assessments to all interested parties. Effective reforms increasingly include measurements that go beyond curriculum attainment, such as surveys of parents or students that incorporate their perspectives of what is and is not working in the schools.
4. *Design a mechanism to monitor improvement and make adjustments*. Measurement alone is not sufficient to realize reform goals; that is, the education system needs a mechanism for responding to the findings of assessments. This mechanism may be centrally organized—say, a central authority being able to re-allocate human and financial resources to quality-improvement efforts. It may also be decentralized—perhaps, parents being able to choose schools for their children based on objective information on school performance, or schools being able to hire and fire teachers based on similar information. Whatever the mechanism, it must be used to make real adjustments in the system. The key is to ensure that the information on the reform's

progress is used to identify needed changes and enact corrections to the course.

5. *Foster real changes in schools and classrooms*. Evidence suggests that reform efforts are most successful when they are focused from the outset on changing conditions and practices in individual schools. We have observed that reform efforts primarily focused on changing a central bureaucracy, in the hope that the changes will somehow "trickle down" to individual schools and classrooms, usually produce disappointing results. Effective reforms more often begin with a critical examination of what is actually happening in schools and classrooms and what has to change there to improve education outcomes. All other changes—in curriculum, pedagogical methods, facilities, central administrative procedures, etc.—have to be driven by the needs of individual schools and classrooms. The focus of reform efforts and their associated monitoring and assessment must be unwaveringly on the operations and needs of schools. Changes elsewhere in the system are motivated and justified only because and only to the extent that they make a direct and positive difference in the classroom.
6. *Recognize systemic linkages*. Policies designed to affect one part of a system will often affect (sometimes unintentionally) other parts. For example, changing science curriculum materials to incorporate hands-on experiments will not be effective unless schools have the needed equipment and teachers have the pedagogical skills needed to teach in this new way. A system approach will make these linkages apparent so that policymakers can address the roles of each participant and institution—teachers, students, administrators, parents, schools, measurement agencies, etc.

Using these basic elements, the RAND team drew on prior reform literature to consider options for restructuring the entire Qatari education system.[1] Four broad dimensions of system design were

[1] The main RAND studies used at this time covered a variety of relevant topics: choice systems in education (Shavelson, 1982; Gill, Timpane, Ross, and Brewer, 2001); implemen-

identified—variety, authority, incentives, and monitoring—each of which can be specified in different ways. To flesh out those variations, the RAND team considered the answers to a set of questions:

- *Variety*. How much heterogeneity should there be among schools? How much variation in kinds of schools, curricula, and instructional approaches?
- *Authority*. Who should make which decisions (e.g., about which schools students attend, the content of the curriculum, the allocation of resources)?
- *Incentives*. How should desirable behavior be rewarded and undesirable behavior discouraged? How can the system exploit preferences and talents?
- *Monitoring*. How should students, teachers, and schools be evaluated and for what purpose?

After a process of deliberation and debate within RAND and with the client, RAND solidified three reform options: a Modified Centralized Model, a Charter School Model, and a Voucher Model. As discussed in more detail below, each option represented an alternative way of thinking about the four dimensions and served as an organizing device for the range of possible design features. These options did not, of course, capture every single possibility; but they did span the range of alternatives in terms of centralization and decentralization, choice, and system-changing models. Importantly, they provided a way to stimulate a debate with the Qatari leaders that would help them clarify their own aims and objectives and would help RAND determine which design components were (or were not) truly feasible in Qatar. In effect, these options, summarized in Table 4.1 along the four key dimensions, served as an organizing mechanism for presenting complex alternatives to high-level decisionmakers.

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tation of school-level reforms (Berends, Bodilly, and Kirby, 2002; Berends, Kirby, Naftel, and McKelvey, 2001; Kirby, Berends, and Naftel, 2001; Bodilly, 2001); and standards, assessment, and accountability (Hamilton, Stecher, and Klein, 2002). RAND researchers with expertise on specific issues were brought into the project team at various times as consultants.

Modified Centralized Model

This first option represented a government-led education system that allowed some school-level flexibility with or without parental choice of schools. This model required the least amount of change to the existing system. The Ministry of Education would retain most of its control: It would continue to fund and operate schools, control resources and staffing, determine national curriculum, and assign students to schools based on geography. Some decisions could be made at the school level,

Table 4.1
Summary of the Three Design Models Along Key System-Design Dimensions

	Design Option		
Dimension	Modified Centralized Model	Charter School Model	Voucher Model
Variety	No change to current system	Potential for wide variety	Potential for wide variety
Authority	Ministry makes most decisions; schools have some discretion on instructional matters; limited parental choice	Limited government oversight; most decisions made at school level; parental choice	Parental choice; most decisions made at school level
Incentives	Principals have authority to hire and fire teachers	Charter holders have freedom to innovate; parental choice motivates school performance	Parental choice motivates school performance
Monitoring	More frequent and extensive student testing; proper evaluation of new initiatives	More frequent and extensive student testing; charter specifies conditions of compliance and performance; performance information publicly available	More frequent and extensive student testing; performance information publicly available; government role greatly reduced

including those regarding teaching style. Incentives for improving performance could include giving principals the right to hire and fire teachers. Parental choice could be introduced in some neighborhoods or for some types of schools, changing the traditional neighborhood-assignment practice. Changes in student outcomes would be monitored through more-frequent and more-extensive student testing (e.g., for all grade levels and multiple subjects) and systematic evaluation of new initiatives.

This option would be the least disruptive to the education system but might not go far enough to promote system-changing reform. Indeed, past experience suggested that any design in which the Ministry retained authority was not likely to bring about large changes. As a feasible starting point, however, this option needed to be included in the mix and have its strengths and weaknesses openly debated.

Charter School Model

The second option represented a decentralized system of schools operated by non-government parties subject to a charter, or contract. Under this option, public charter schools would continue to be funded by the government, and private schools would be maintained in a separate system. In distinction from the Modified Centralized Model, this model offered change at the system level by incorporating parental choice of children's schools.

The charter school option would introduce more variance, choice, and decentralized decisionmaking; provide more incentives; and increase accountability. Multiple types of schools would be encouraged through both incentives and opportunities for interested parties to operate publicly funded schools with limited government oversight. Parents would be given choices about which schools their children could attend; decisions about resources, staffing, curriculum, and teaching styles would be devolved to schools. By assuming an independent monitoring body, this option would institute student testing and school evaluations to provide schools and parents with information about school and student performance. Accountability, which is key in this option, would be based on outcomes and performance rather than

rules.[2] Student performance and school evaluation data would permit parents to make informed school choices, allowing well-performing schools to flourish while poorly performing schools lost enrollment until they improved.

This option had appeal for Qatar because some control over publicly funded schools would be maintained via the charter mechanism, but a large, centralized bureaucracy would not be required. A government body could, however, provide some common structure—for example, by setting performance standards or admission policies. Funding mechanisms, including the use of incentives, would also provide some leverage over schools. The opportunity for individuals and groups to establish charter schools and for parents to choose them would enable key constituents in society to become actively engaged in the school system.

A reform that promotes decentralization requires fundamental changes in the central office's role (Hill and Bonan, 1991; Bimber, 1993). The central office must be willing to relinquish some authority to the more independent schools and to use outcomes as its primary monitoring device. In addition, a suitable accountability system has to be established. The charter school option assumed that there would be enough interest among parents to enable choice among different schooling alternatives and that there would be enough parties interested in contracting with the government to run their own schools. In Qatar, where centralized authority is the norm, the new "rules of the game" would need to be carefully designed. Although the Ministry could be the entity to grant charters, it might not be the best choice, given its history. An alternative, and a further system-changing step, would be to establish a chartering authority independent from the Ministry. Adopting a Charter School Model in Qatar would be much riskier than implementing a Modified Centralized Model and would require significant behavioral change on the part of many constituents.

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[2] Charter school approaches are being implemented in various parts of the world (Fiske and Ladd, 2000; McEwan and Carnoy, 2000; Hill, 1996; Miron, 1993; Walford, 1996; Whitty, Power, and Halpin, 1998; Wylie, 1994), and early results are promising (e.g., Dijkstra, Dronkers, and Karsten, 2001).

Voucher Model

The third option represented the greatest change: a highly decentralized, privatized system that would allow parents to choose any school (including privately owned schools) using government-issued vouchers. Schools would make decisions about resources, staffing, curriculum, and instruction. An independent evaluation body would carry out student testing to provide parents with information about school performance. Data on school performance, such as enrollments and test scores, would be routinely collected, analyzed, and reported to an oversight body. The Ministry or, if further system change were possible, another government body could maintain some oversight of the schools (e.g., on issues related to facilities or student safety) and provide training or curriculum support.

A pure voucher option relies on parents making informed decisions and reacting to school performance data in a "desirable" way. This approach would dramatically reduce the degree of centralized control and would allow the market, through enrollment decisions, to help regulate the system.[3]

The voucher option was similar to the charter school option but more ambitious in terms of system change and decentralization. Both models aimed to induce reform by changing the fundamental organization of the school system (Miron and Nelson, 2002; Gill, Timpane, Ross, and Brewer, 2001). In the Qatar context, the aim was to break the government monopoly on the *operation* of schools but maintain some government *funding* of schools while ensuring parental choice among a variety of schooling options. Where the two options differed was primarily in school eligibility for participation and the degree to which schools that accepted government funds were regulated. The voucher option could open government funding to existing private schools and newly developed private schools without developing charter schools. The charter school option would provide government funding only to schools that received government charters. Government oversight of charter schools in the charter school option would be greater than that

[3] Education vouchers have been tried in various parts of the world (see, for example, Carnoy and McEwan, 2003).

of schools in the voucher option. The voucher option would rely to a great degree on market operation to promote choice, flexibility, and efficiency in the education system; the charter school option would rely on government oversight in the form of contract enforcement. Both options assumed that consumers—students and their parents—would be sophisticated and know what they wanted. The voucher option would also rely on a set of stable private schools with a clear sense of purpose and technical competence. Otherwise, the system would be open to inequity, instability, poor quality, and even fraud (Finkelstein and Grubb, 2000). The voucher option may have been premature for the Qatari context, since the country had no market for information on school performance, and the truly outstanding schools, such as Qatar Academy (a private school sponsored by Qatar Foundation), were limited in number.

Model Selection

RAND presented the three reform-model options to the Qatari leadership in January 2002. The Modified Centralized Model was rejected as not bold enough to produce the required changes. The Qatari leaders were initially attracted to the fact that the Voucher Model represented a bold change rather than an incremental improvement. They could envision a system with high levels of variety, choice, and information. But they also recognized the risks associated with establishing a voucher system in the absence of both a strong, stable set of school operators that could establish high-quality schools and a sophisticated information system on school quality for parents. To be successful, a voucher system depends not only on a set of high-quality providers ready to expand capacity, but also on the availability of good information about school quality. Parents and other stakeholders must be aware of the information and able to consult it. Because these basic conditions were not present in Qatar, the Charter School Model emerged as the most attractive option. The Qatari leadership selected it as the basis for the reform, with a view toward transitioning to a voucher system in the future.

Once the model that would serve as the basis for the reform's design was selected, the RAND team needed additional guidance on a number of issues to produce a workable design and implementation plan. Qatari leaders and RAND team members discussed several of the more detailed issues—for example: Is co-education possible, or must schools remain gender segregated? To what extent will men and women be able to work together within new institutional structures? Is Qatarization (discussed in Chapter Two) a priority with respect to staffing the new system? What level of financial resources will be available to implement a new system?

The Qatari leaders encouraged the study team to develop an "ideal" plan based on what had been learned during RAND's initial assessment. They also stipulated that because Qatar is an Islamic country, Islam would continue to be taught in all government-funded schools. In addition, even though political and social realities would certainly have to be considered in implementing any plan, the Qatari leadership felt that many implementation details could be hammered out once there was agreement on a basic reform design.

The Qatari leaders also stipulated that the cost of implementing the reform should not constrain planning. They wanted an exemplary, world-class system, and they understood that building and implementing such a system would require significant financial investment.

Through August 2002, RAND further refined the Charter School Model and tailored it to the Qatari context. In addition, the Qatari leadership, sensitive about prior reform efforts having failed because of inadequate planning, asked RAND to develop an implementation plan with detailed task lists and timelines.

The Independent School Model

One of the first revisions to the selected option was to change its name from Charter School Model to Independent School Model. The reason for the new name was twofold: Unlike the word *charter*, the word *independent* could be appropriately translated into Arabic. Moreover, the

new name served better for communicating the model's principles to the public and for highlighting the autonomy of the new schools.

The Independent School Model represented a move to a more decentralized system of schooling than had existed in Qatar. The basic aim was to build a system that would have many more schooling options; a dramatically reduced level of centralized control; more monitoring and evaluation of students, administrators, and schools in the context of an accountability system; and parental choice. The goal for the new system was to improve education in Qatar by generating a variety of schooling alternatives—with different missions, curricula, pedagogy, and resource allocation models—and then to hold schools accountable for quality through the provision of information about schools, parental choice, and minimal government oversight.

The two following subsections describe, respectively, the four design principles that were the basis of the Independent School Model and the seven key elements used to support and enact those principles. It is important to note that what we are discussing here is the model at an abstract level, which does not represent all facets of the actual implementation. Chapter Five discusses the structural design and implementation strategy in more detail.

Model Design Principles

The design of the Independent School Model was based on the principles of

- Autonomy
- Accountability
- Variety
- Choice.

Autonomy. In a decentralized system, decisionmaking authority rests with those closest to the work itself (Hannaway, 1993a,b; Plank and Boyd, 1994)—a condition that is expected to empower educators to better meet the needs of their students (Kolderie, 1992). Independent schools would operate autonomously, subject to the conditions specified in a time-limited contract. The State of Qatar would

grant the contract, which would contain regulations common to all schools and rules under which individual schools would operate. To allow for autonomy and to hold schools accountable for compliance to individualized contracts, a comprehensive restructuring of relationships between charter schools and the central office would be necessary (Bimber, 1993).

Accountability. Independent schools would be held accountable to the government through two mechanisms. First, schools would apply for Independent status and enter into a contractual arrangement. Regular audits and reporting mechanisms could be used to monitor compliance. Second, schools would be evaluated regularly through a set of measures, including standardized student assessments. The results of the assessments and other information about schools (e.g., facilities available, courses offered) would be made available to all interested parties and summarized for each individual school. In this way, parents could judge for themselves whether the educational approach and results satisfied their children's needs. Therefore, schools might close, either through irregularities that the contracting authority deemed unacceptable or through lack of enrollment. Because funding would depend on the number of students enrolled, the school would be accountable to parents and students (Gill, Timpane, Ross, and Brewer, 2001).

Variety. Interested parties would be encouraged to apply for Independent school status and, if approved, would operate schools. Diverse schooling options would be offered, since each Independent school would be free to specify its educational philosophy and operational plan. The contracting authority could provide incentives to ensure diversity or to open schools to meet particular societal demands (e.g., a school specializing in science and technology). Additionally, existing public and private schools, including the scientific complex schools, could apply to convert to Independent status. Having a variety of approaches was especially important for the school system, because there were no approaches known to lead to outstanding student outcomes in Qatar. If the system included a variety of approaches, each school could be studied to determine what does and does not work well for Qatari students.

Choice. Once parents were given information on school characteristics and outcomes, they would be able to choose the Independent school that best fit their children's needs. The extent of choice would depend on the number and type of Independent schools. Competition for students and resources should force all government-funded schools—traditional and Independent—to be more responsive to parents' demands (Wells et al., 1998; McDonnell and Grubb, 1991).

Design Elements

Embedded within the Independent School Model design are the basic elements needed to support and enact the principles of autonomy, accountability, variety, and choice:

- Independent school operators
- Contract guidelines
- School finance formula
- Professional development
- Curriculum standards
- Standardized assessments
- Data collection, analysis, and dissemination.

Some of these elements reflect those generally associated with effective reform designs (discussed earlier in this chapter), and some are specific to the Independent School Model.

Independent School Operators. The reform's long-term success would depend on a supply of new high-quality schools provided by a group of school operators. To work best, the reform would need "strong" operators—those that would be relatively stable, sure of their purpose, technically competent, and committed to the product they provided (Finkelstein and Grubb, 2000). To help promote the emergence of strong operators, the government would use financial and regulatory incentives to attract parties that wanted to be school operators; they, in turn, would run government-funded schools under contract to the State of Qatar.

The contracting mechanism would allow many different stakeholders to become actively engaged in the school system. Operators

could be groups of educators or parents, private education-management organizations or schools, or any other entity capable of providing educational and financial guarantees of its ability to attract a sufficient number of students and educate them successfully. An Independent school operator could run one school or a network of schools. Existing schools (either private or government run) could apply to convert to Independent school status, and new operators could apply to open a new school. For example, if a company such as Qatar Petroleum were dissatisfied with the current level of secondary science preparation, it could apply for a contract to open a school of its own. Similarly, if a group of parents was dissatisfied with its Ministry-operated school, it could organize the school's conversion to an Independent school.

This model would permit many different kinds of schools and thus would be likely to ensure a better match between student needs and schooling options than that offered by the one-size-fits-all Ministry schools. Having a variety of schools could also help make possible the careful research needed to determine what does and does not work well for Qatari students.

The government authority granting the right to operate a school could specify the kinds of operators permitted and the number of contracts issued. For example, the government might decide that it needs high-quality early-childhood programs and thus choose to grant contracts under favorable conditions to operators offering such programs. The government might also refuse contract applicants because they do not have a convincing education plan. Technically, no types of school operators need be precluded from opening an Independent school, but contract guidelines could limit eligibility.

Contract Guidelines. Independent schools could be run by any qualified party willing and able to enter into a contract with the government to provide schooling. The essential features of the contract would be as follows:

- Spell out the educational and financial plan of the school.
- Provide for light government oversight of the school (significantly less regulation than exists in traditional public schools).

- Pay the operator the expenses of running the school and offer the possibility of earning a margin or profit above costs.

The right to operate a school under contract could be granted—and could be taken away—by a government agency overseeing the Independent schools.

The rules under which Independent schools operated would be referred to as "contract guidelines," akin to the rules of any contract that lays out each party's obligations. Guidelines would detail the conditions under which an Independent school was to provide schooling and would require that the operator submit an application covering several components, including school mission, education plan, personnel plan, and budget. Contracts would be granted for a finite period. They could be revoked for non-adherence to their rules and could be renewed if the contract-granting authority deemed that school-operator performance justified continuance.

Since a goal of this reform was to maximize school autonomy and variety, the guidelines would be written to allow school operators and staff to make many decisions about admissions, pedagogy, and staffing. The contract guidelines would be silent on some key issues, such as whether the school must be gender segregated and how long expatriate teachers could be under contract. The open nature of these guidelines could lead to significant educational and even societal changes, depending on the preferences of operators and parents.

But the guidelines would also include some conditions to which all schools would be expected to adhere, such as student testing and provision of data for evaluation. In addition, all schools would be contractually obligated to conduct self-assessments and to provide annual reports on the findings of those assessments. Contract guidelines could be updated regularly, as the State learned what it wanted to control and where it could allow more freedom and flexibility.

Financing. The financial framework for the Independent schools was an extremely important part of the overall system. Students currently eligible for government funding would continue to be eligible in the new, Independent school system, and the government would pay the costs of their schooling directly to school operators. The

government could also allow Independent schools to accept additional students—students ineligible for government funding—on a tuition-paying basis.

The means by which Independent schools were to be funded, and the level of funding, would be a key government mechanism for influencing the types of school operators that emerged, the quality of the teachers they employed, the facilities they used, and the extent to which they innovated and adopted new tools and techniques from around the world. The comprehensive restructuring of incentive systems, which is needed for effective decentralized school governance systems, was also important (Bimber, 1993). For example, funding could be designed to provide incentives to develop schools for particular kinds of students or to permit upgrading of instructional and physical facilities. The financial framework could also be structured to reward success with bonuses.

Ideally, the funding mechanism for Independent schools should be simple, transparent, and stable over time. The financial arrangements should generate a reasonable margin of profit for school operators but rule out excessive profits. Funding mechanisms should recognize real cost differences based on individual student needs. For example, it is well known that high school programs, with their laboratories and other expensive resources, cost more to operate than do programs for younger students; that students who are struggling academically need extra attention; and that disabled students require significant additional resources. An ideal funding scheme recognizes these differences by providing varied allowances for different student situations.

Professional Development. It was recognized that development of a strategy for ensuring an adequate supply of highly qualified, well-trained professionals was important to the success of the Independent school system. Even if the new schools were successful in attracting the most highly qualified Qatari teachers and staff available, most of these individuals would still need to learn a very different set of professional skills to function effectively in a decentralized but standards-based system. Special attention would have to be paid to ensuring adequate professional development for teachers, administrators, school operators,

regulatory agencies, governing boards, other school staff, and perhaps even parents and community members.

Professional development could be provided in a number of ways. For example, training services could be offered at nominal or no cost to Independent schools on a voluntary basis. An alternative would be to guarantee adequate financing of Independent schools in the hope that operators would use a portion of these resources to provide extra staff training as needed. An approach that allows operators and schools to make their own decisions about training needs might be insufficient in the early years of the reform, however, because staff might not fully understand the degree of change required. Since the success of the reform would be highly dependent on operator and school staff capacity, the model stipulated direct provision of professional development in at least the first five years of the reform. It was decided that the precise nature of that provision would be determined later, after needs had been assessed and different delivery options explored.

Curriculum Standards. Although a key principle of this model was to develop a variety of schooling options, schools would have to maintain common education standards reflective of a student's ability to succeed in both higher education and the local labor market (Hill and Bonan, 1991). The Independent schools would be expected to follow a set of centrally designed curriculum standards in four core subject areas selected by the Qatari leadership as the most important for realizing social and economic goals: Arabic, English, mathematics, and science. Other important subjects, such as history, would not follow a set of centralized standards. By decree, all schools would teach Islamic studies.

Independent schools would be free to offer any other subjects and, if desired, to develop their own standards in these subjects. For example, a science school could choose to offer more mathematics and science classes and fewer art and music classes than an arts-oriented school might offer. The government agency that designs the standards could help individual schools develop their own standards or provide schools with guidelines on how to do so.

Two types of curriculum standards would be defined: content standards and performance standards. Content standards are broad

expectations about what students should know and be able to do in particular subjects and grade levels. Performance standards are explicit definitions of what students must do to demonstrate proficiency on the content standards at a specific level. Together, content and performance standards clearly delineate the breadth and depth of knowledge that students are expected to demonstrate. If implemented well, curriculum standards can be effective mechanisms for achieving desired outcomes with respect to both educational content and quality (American Federation of Teachers, 2001; Bechard, 2000; Corcoran and Goertz, 1995).

In this model, education experts would specify the standards, but schools would have latitude in designing curricula and programs to meet them. Once standards had been specified, the Independent schools could design appropriate curricula or purchase them from existing suppliers, perhaps modifying them to better address individual school goals. Teachers would also be free to design instruction in multiple ways to suit the needs of different students. Unlike the current system, which prescribes content but is silent on performance expectations, this new system would provide maximum flexibility for schools and teachers to help students reach specified performance levels.

For a standards-based system to be successful, classroom teaching and learning activities should align with and support the curriculum standards (Hamilton, Stecher, and Klein, 2002). This connection provides an incentive for operators and administrators to allocate resources to professional development for teachers and to develop innovative instructional materials and approaches that support student learning to reach the standards.

Standardized Assessments. Students in Independent and other public schools and in private schools would be regularly assessed using standardized tests aligned with the standards. Test results would be publicly reported at the school level so that parents would know how well schools were performing. The government would need a set of valid, reliable standardized tests. To be useful for school improvement and accountability purposes, the tests would have to provide student-level and school-level data. Since the national tests would cover only four subjects and would be further limited in terms of the types of

knowledge and skills that could be measured, the accountability system would have to include additional performance indicators.

Students would have to be assessed regularly so that achievement gains over time, or "value added," could be measured. Gain, or value-added, scores are important because they illustrate progress, are less susceptible to one-time fluctuations in performance, and take into account baseline performance levels. Ideally, a series of scores over several years or more would be available for making reliable estimates of change.

The purpose of the assessments would be to provide information for decisionmakers about school and student needs. But standardized tests would not be used as part of a "high stakes" system—i.e., one in which results have implications for students or teachers (e.g., student graduation depends on an examination score). Even so, public reporting of test scores at the school level would represent a significant change in Qatar and would call for careful communication with participants in the system.

Data Collection, Analysis, and Dissemination. To provide objective evaluative information, the government would need an independent monitoring body. To be credible, this body should be independent from those that contract with or provide support to schools. It would be established to administer the national tests and to collect other data about system performance. For example, it could conduct surveys of students, parents, teachers, and other stakeholders and perform case studies of schools and classrooms. In addition, it would make and distribute "school report cards" for each school, providing information to parents and policymakers on school characteristics and performance. This independent body would also make data available to researchers wanting to study the system and to policymakers needing to monitor the reform's progress.

Expected Impact of the Independent School Model

The Independent School Model reform was expected to generate changes in the Qatari school system and affect a number of constituents and organizations, as follows:

- **Students** would be introduced to a more modern curriculum benchmarked to countries with high student performance. Students would have to work harder in school to meet these standards. Teaching should be more individualized, and this in turn should have positive effects on student motivation and satisfaction.
- **Teachers** would have more freedom in the classroom and would thus be able to adapt their teaching strategies and techniques to the standards and to meet the needs of individual students. This freedom should increase teacher motivation and satisfaction. Because the Independent schools would offer more flexibility in how teachers are recruited and rewarded, the quality of teachers in the system should improve. Teachers should also be better paid as schools learn that employing high-quality teachers leads to better results, which in turn leads to higher enrollment. Schools would need to compete for the best teachers. Teachers in the new schools should also have more opportunities for professional development.
- **Parents** would be more informed about schools and their performance and would be able to use this information to choose the best schooling alternatives for their children. Parental choice should affect what schools offer. Because the Independent schools would incorporate plans for parent involvement and engagement in their contracts, parents should be afforded increased opportunities to communicate with teachers and could even participate in school-level decisionmaking. Parent attitudes toward the education system and satisfaction with the system should improve.
- **School leaders** would have much more autonomy. Principals and other administrators should be able to make many more decisions, which should increase their motivation and satisfaction. School leaders would have more opportunities for professional develop-

ment in order to acquire the new skills they need to be successful in a decentralized system. Schools could adopt compensation systems that reward good performance, and school operators could make a profit if their schools were successful.

- **Policymakers** would have more data and information about the performance of schools and the system as a whole. They would be able to use these data and information to monitor the reform and to inform strategic decisionmaking.

To realize these potential effects, only a few Independent schools should be opened at a time. Drawing attention to a few high-quality schools should have spillover benefits for other schools and systems, both within Qatar and across the Gulf. New schools and models of schooling could affect the Ministry, perhaps spurring it to adopt some of the principles and elements described here. Most Gulf countries have similar education systems, so the Independent School Model should be of broad interest. If successful, the model developed in Qatar could spark change across the region.

CHAPTER FIVE

Realizing the Independent School Model: Refined Design and Implementation Strategy

History tells us that implementation of education reforms is difficult. Because previous reform attempts in Qatar had not been successful, partially as a result of poor implementation planning, the Qatari leadership wanted not only a conceptual description of the Independent School Model, but also an implementation strategy to guide the reform effort. This strategy needed to move the Independent School Model from an abstract option for changing the system into a reality.

In working with the Qataris to develop the implementation strategy, RAND relied on its knowledge of the Qatari system, the implementation requirements embedded in the Independent School Model itself, and prior research experience.[1] This background suggested that attention needed to be paid, from the outset, to some general principles:

[1] RAND's prior experience started with the famous "Change Agent" study of implementation and sustainability of educational innovations. McLauglin (1990) summarizes the conclusions of that study and also offers further reflections from a viewpoint of ten years later. The study was originally documented in a series of RAND reports in the 1970s (Berman and McLaughlin, 1974; Berman and Pauly, 1975; Pascal, Elmore, Endo, and McCluskey, 1975; Berman, Greenwood, McLaughlin, and Pincus, 1975a,b; Sumner and Zellman, 1977; Berman, McLaughlin, Bass-Golod, Pauly, and Zellman, 1977; Berman and McLaughlin, 1978). Later examples of RAND studies on implementation and sustainability include works documenting the lessons of the New American Schools and the scale-up of individual reforms in general (Berends, Bodilly, and Kirby, 2002; Glennan, Bodilly, Galegher, and Kerr, 2004).

- *Flexibility*. The organizational structure must be designed to grow and change as needed.
- *Transition*. The structure must be able to support the move from one system to another.
- *Timing*. The strategy must enable quick movement so that schools could open in Fall 2004.
- *Leadership*. There must be leaders who could effectively develop the reform and communicate with the public.
- *Capacity*. The strategy must provide for capacity building and for using external experts to address shortages of capacity in Qatar.
- *Stakeholder engagement*. There must be input to ensure sufficient sensitivity to the local context and to educate the reform's "customers."
- *Low risk*. The strategy must minimize disruption to the current system and produce clearly recognized benefits early on.

RAND consulted the Coordinating Committee at several points during development for advice and feedback. Some ideas in the abstract model were redefined in this process or set aside for later consideration.[2] This chapter describes the refined design and the strategy for implementing it that were formally presented to the Qatari leadership in June 2002.

We first describe the organizational architecture, including the new institutions to be established, their authority and governance, and the role of the existing Ministry of Education. We outline the missions and functions of these new institutions, discuss the role played by RAND and other contractors, and present the overall timeline for implementing the reform. We also present some potential implementation challenges that were recognized at the outset. Again, what we describe here is the initial, *refined* design and its implementation strategy. While this initial design and strategy were not completely realized, they served as the blueprint for the reform as it unfolded.

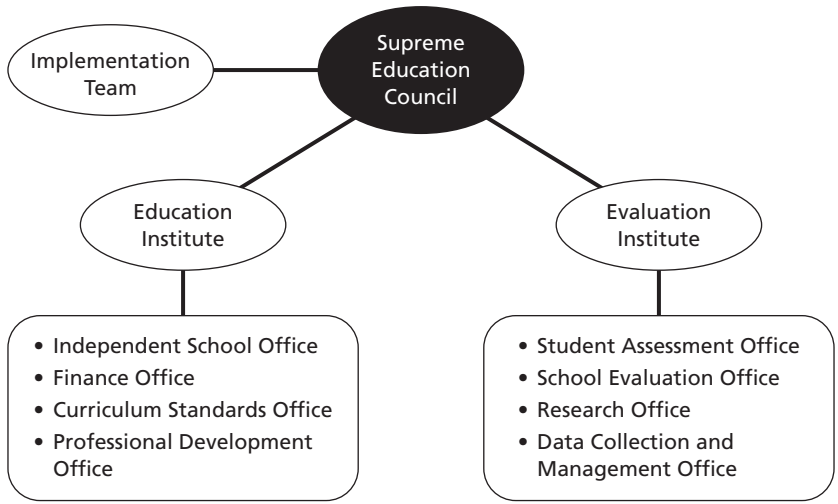
[2] For example, we set aside some issues concerning the hiring and firing of teachers and merit pay because these issues are complicated by the fact that teachers are civil servants.

Building an Organizational Structure

As discussed in Chapter Four, the adoption of a system-changing reform required that new institutions be formed. Rather than abolish the Ministry of Education or make explicit changes to it, the design called for a parallel structure with new institutions that would be operationally and physically separate from the Ministry. The design also prescribed that a monitoring body be established as a separate organization from the one charged with supporting and overseeing schools.

Three new permanent organizations would be formed to provide the infrastructure needed to support the new Independent school system: a new governing body, called the Supreme Education Council (SEC); and two institutes, the Education Institute and the Evaluation Institute. Each Institute would house four Offices, control its own budget, and receive its resources from the SEC. An impermanent entity, the Implementation Team, would provide assistance to the SEC and the Institutes for the first five years of the reform. Figure 5.1 illustrates the organizational structure.

Figure 5.1
Organizational Structure for Independent School System



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Supreme Education Council

The SEC was designed to be the main education policymaking body, setting broad policies and short- and long-term goals for the new system, as well as for the Ministry of Education and all postsecondary education in Qatar. An Emiri Decree would establish the SEC as a legal organization in Qatar. The Qatari leadership decided that the Crown Prince would chair the SEC, with Her Highness Sheikha Mozah as vice chair. The plan recommended that membership consist of a small number of influential and respected individuals especially representative of such education system consumers as employers and higher education. In addition, the plan recommended that the proposed members be committed to building an improved school system and able to participate actively on a part-time basis. Members were to serve for three-year renewable terms. The SEC would

- Have legal authority to set broad policy goals, both long and short term
- Provide oversight of the system, including the Education and Evaluation Institutes
- Grant, review, and revoke contracts with Independent schools
- Manage the communication strategy related to the new system
- Monitor schools and students, providing assurance that problems would be identified and fixed with minimal disruption
- Give high-level visibility and credibility to the reform.

The SEC would have several operational functions. It would hire the directors of the Education and Evaluation Institutes and hold them accountable for operating according to the reform's principles. In addition, it would approve the budgets and major programs of the Institutes, as well as the contracts held by Independent school operators.

To carry out its mission, the SEC would need a flow of information on key issues and decisions. It would need to maintain an open and continuous channel of communication with the Institutes and with those who work in and attend the Independent schools. The Implementation Team would be responsible for ensuring the necessary flow of information among the SEC, the Institutes, and the schools.

Implementation Team

The plan was for the Implementation Team to be established at the beginning of the reform effort, for a five-year term, to support the transition. It was to assist in establishing the three new organizations and would provide oversight, coordination, and advisory functions. This team would be drawn from members of the Coordinating Committee that RAND had worked with during the design stage, and would be co-led by a Qatari and the RAND project leader. The Implementation Team would set up the two new Institutes under the SEC's guidance. It would identify key personnel, secure necessary resources, and provide technical and hands-on assistance. The team would seek recommendations for key staff positions, review applications, interview top candidates, and present its recommendations to the SEC. It would monitor, document, and evaluate the reform as it progressed, report on its progress to the SEC, and recommend adjustments to the plan as needed.

Education Institute

The Education Institute would undertake the contracting of schools and provide those schools with the financial, professional development, and other resources necessary to educate students successfully. It was to house four offices: the Independent School Office, Finance Office, Curriculum Standards Office, and Professional Development Office.

The **Independent School Office** would have responsibility for developing guidelines for the contracts under which Independent schools would operate. As described in Chapter Four, the contract was to be the main reform vehicle for ensuring autonomy and variety, so guideline development would be a key activity for this Office. It would also actively recruit potential institutions and operators and assist them in the application process. It would make recommendations to the SEC to grant, renew, or revoke Independent school contracts. It would provide support for Independent school operators to help them achieve their educational goals and would monitor and enforce the terms of their contracts. Throughout the life of the reform, an important task of the Independent School Office would be to assess the congruence between the education needs specified by the SEC and the number, types, and performance of Independent schools in operation. In the

event of a gap between the projected needs and the existing schools, the Independent School Office would provide incentives for operators to propose specific types of schools.

The **Finance Office** would allocate resources to schools based on a sound funding formula in which per-pupil allocation was to bear a close relationship to the estimated cost of educating students in the Independent schools. The amount would be set at a level to attract potential operators and would allow reasonable, but not excessive, rates of return to operators. During the early implementation, further research to develop this formula was planned. The process for establishing funding amounts should be fair, transparent, and flexible enough to allow for unexpected costs. It was noted that it could become necessary to supplement per-pupil funding allocations with a grant system in the event that real costs of schooling were underestimated, and as a way to promote variety among schools. The Finance Office would establish procedures for distributing funds to schools in a timely and efficient manner. It would also ensure that school operators maintained high standards of financial management, provide guidelines for doing so, and monitor spending.

The **Curriculum Standards Office** would be responsible for developing curriculum standards for the Independent schools that specified both content standards (common content that students should learn in each subject) and performance standards (what students must do to demonstrate proficiency). These standards, which are a mechanism that a government can use to promote high quality in a decentralized system, would play a crucial part in the overall system. They would embody the government's expectations for student outcomes, and they would set a performance benchmark for all publicly funded schools whose students would eventually take national assessments based on these standards. Curriculum standards were to be developed in four core subject areas for grades 1–12: Arabic, English, mathematics, and science. The new standards would also form the basis for the professional development efforts directed at school-level personnel.

The **Professional Development Office** would provide professional training programs for teachers, principals, and others in the Independent schools. Teachers would require professional development

in order to function in a setting where they must take considerable initiative, employ multiple teaching strategies, work with little day-to-day supervision, and collaborate with other teachers. Independent school operators would need training to understand the standards and accountability system, financial systems, and so on. The Professional Development Office would be responsible for conducting needs assessments for professional development, designing activities and programs, and identifying appropriate outside providers.

Evaluation Institute

The Evaluation Institute would assess and evaluate the performance of schools, students, and other education constituents, programs, and service providers to encourage the development of high-quality options for the education of students in Qatar. This Institute would be an independent monitoring agency with authority to assess students in most schools in Qatar—Independent schools, Ministry schools, and private Arabic schools. It was to house four offices: the Student Assessment Office, School Evaluation Office, Data Collection and Management Office, and Research Office.

The **Student Assessment Office** would design and implement a student assessment system at the national level. The system was to include four elements: national tests of student achievement, a process for regular administration and monitoring of these tests, a process for maintaining test quality (e.g., validity studies, refreshing the item pool), and a process for producing reports on student achievement at the national, school, and individual levels. The new tests would need to be built in alignment with the new curriculum standards.

The **School Evaluation Office** would design and implement a process for evaluating schools. It was to develop "school report cards," which would provide school-level achievement scores from the national test, as well as additional descriptive and evaluative information about each school. The report cards would be publicly available to all parents, who could use the information in choosing schools for their children. In addition, school administrators and perhaps teachers would use the data on the report cards to develop school improvement efforts and to monitor their success.

The **Data Collection and Management Office** would be responsible for collecting and maintaining data that would inform school constituents and decisionmakers about the reform's progress and the education system's performance. This Office would develop a complete data system, to include (for example) codebooks of data properties, file layouts, data security, and linkages among information. The Research Office would lead the design of this data system.

The **Research Office** would design and monitor the comprehensive data system. The Qatar National Education Data System (QNEDS) would contain descriptive information on students, parents, teachers, school administrators, schools, and employers. The Research Office would also conduct studies on schools and on the reform in general. As mentioned in Chapter Four, one reason to infuse variety into this reformed system was so that decisionmakers in Qatar could learn what works well for Qatar's students. The Research Office would conduct studies for this purpose to support planning, policy formulation, and decisionmaking.

Operational Principles for Institutes

The design incorporated general principles for the operation of the Education and Evaluation Institutes and their Offices. The directors of the two Institutes would be responsible for the strategic direction and vision of their respective Offices and their overall management. The Institute directors would be able to hire, fire, and oversee the work of their Office directors; they would also manage their own budgets, allocate funds to their Offices, and oversee their and their Offices' needs for facilities and information technology.

Each Institute director would be responsible for external communications to the other Institute, the Implementation Team, the SEC, and other external constituents. These directors would also work closely with the SEC to fashion education policy for the country, monitor progress, and make adjustments as needed. Each Institute director would communicate the Institute's vision and strategy to the general

public through speeches, press briefings, web pages, newsletters, and other public relations activities.

Office directors would have their own budgets and autonomy, yet be accountable to their Institute director. The Institute directors would be able to initiate new projects through their Offices or to redirect efforts within them.

The new Institutes and Offices were to operate more creatively than the Ministry of Education, in ways consistent with the principles of the reform, and to be less reliant on hierarchy and rules. Unlike the Ministry, the new organizations would be much leaner, to promote flexibility and to work against the tendency to develop a new bureaucracy. They would promote new ways of working in Qatar, ways that would support collaboration, teamwork, individual creativity and initiative, and personal accountability. Individuals would have authority to solve problems and make decisions. To promote inter-office and inter-institutional collaboration, the two Institutes were to be housed together at the same location, at least initially.

Relationship with the Ministry of Education

The design called for a new organizational structure operating alongside the Ministry of Education. The Ministry would be part of the reform, however, since all students attending Ministry schools would take part in the national assessments. Ministry schools would also provide information for the school report cards. Thus, the accountability system was to encompass most of the schools in Qatar, and parents were to have information about the broad range of available education options.

Although the reform structure would not change the Ministry directly, it would allow the Ministry to participate in the reform via several mechanisms. Some Ministry schools could be converted to Independent schools. Over time, the Ministry could become a large operator of Independent schools, if it could develop the internal processes needed to manage Independent schools effectively. The Ministry could adopt the new curriculum standards (in fact, the SEC later

required it to do so). The Ministry could provide or contract for professional development to enable teachers to teach to the new standards. The information from student testing and surveys would be available to the Ministry to enable it to manage education improvement.

Over the longer term, the Ministry's fate would depend partly on the reform's success and the Ministry's response to the reform. If a large number of Ministry schools were to convert to Independent school status, the Ministry could downsize or even be abolished. If not, the Ministry could still have a place in the education system, perhaps as an operator of a system of Independent schools with a mix of characteristics, some reflective of the existing government schools and some new.

Role of RAND and Other External Contractors

The Qatari leadership wanted RAND to be heavily involved in the reform's implementation because RAND was the most familiar with the model and its reform principles. As a result, RAND was to take on a central role in implementing the Independent School Model. While other contractors executed key tasks, RAND would provide leadership, coordination, monitoring, and quality assurance. RAND would assign some staff to work in Qatar on a day-to-day basis; other staff would make scheduled visits from the United States and Europe to maintain continuous on-site management.

The RAND team would draw from existing RAND employees and would recruit new members who had specialized expertise in implementing education reform, especially related to charter schools. RAND would organize a general management team, a team focused on cross-cutting implementation, and teams for each of the eight Offices to carry out background studies and analyses. Nearly every team member would also travel to Qatar to work directly with Office directors and staff. The RAND project leader would co-lead the Implementation Team and continue to report directly to the Qatari leadership.

In the initial stages of implementing the reform, RAND's tasks would include working with the Implementation Team to recruit the new Qatari leadership for the Institutes and Offices, advising on the

selection and assessment of other external contractors, and ensuring the overall quality of the reform effort. RAND would also be responsible for maintaining close contact and ongoing communication with everyone involved in the reform effort in order to identify and quickly address any obstacles as they emerged. In the initial stages, as Institute and Office directors were coming on line, RAND would work closely with these leaders to provide advice, carry out specific tasks, and make decisions jointly. RAND would also have an important role in mentoring the Institute and Office staff members to help them achieve a creative and collaborative working environment. As the Institutes and Offices became more established and operational, RAND would reduce its staffing levels and function primarily in an advisory role.

A major challenge in implementing a reform of this scale and complexity was the small base of expertise and human resources in Qatar. To meet this challenge, the implementation strategy called for the use of outside experts to supplement Qatari personnel. In addition, the Qatari leadership did not want the new system to replicate the old one. The new institutions were to be small and flexible, not like the Ministry of Education. Use of external contractors would confer two benefits: it would augment local capacity and would model a leaner organizational style with no tendency to develop centralized organizations requiring large numbers of staff to oversee every aspect of the system.

In this spirit, the Institutes would be able to hire the expertise needed for a particular task and period. If the cost for any service exceeded a ceiling amount (to be determined by the SEC), the contract would need SEC approval. Initially, RAND would be on hand to help identify needs, write specifications for contractor services, identify potential providers, review proposals, and assist in the selection process. As a way to build local capacity, the specifications would require contractors to involve Institute staff in their day-to-day work and/or provide hands-on training and mentoring. The RAND team expected that the Institute staff would grow more capable over time and be able to take charge of a greater share of the technical work. To maintain the small size of the Institutes, some ongoing use of contractors was expected, even as local staff became more capable.

It was anticipated that contractors would be needed in some specific areas. The Independent Schools Office, for example, could use contractors to help prospective Independent school operators write their applications and/or to help the SEC decide whether to grant a contract to operate an Independent school. The Finance Office would hire external auditors to monitor the Independent schools. The Curriculum Standards Office would identify and contract with well-respected and experienced developers of curriculum standards.

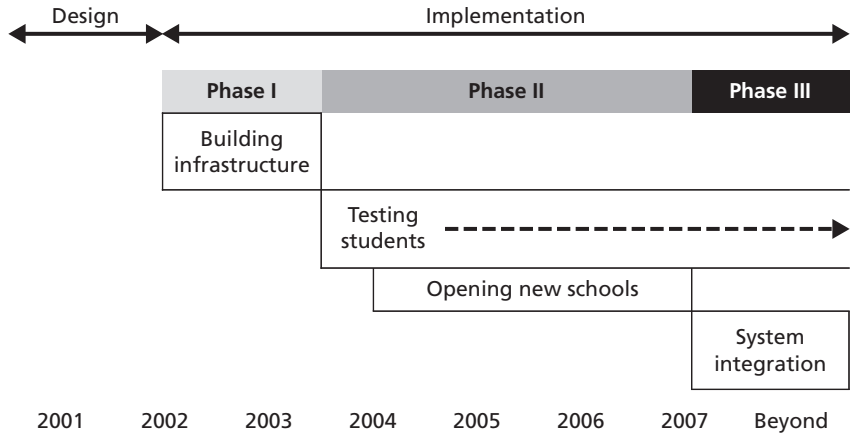
The Professional Development Office was expected to depend heavily on external contractors. An early decision facing this Office would be whether to outsource training or to build local training capacity and, if the latter, to determine the areas in which to build it. The use of contractors would need to be worked out in more detail according to a needs assessment. Several options were outlined: Contractors might provide direct professional development services in the schools, work with Professional Development Office staff to assess needs and design services, and/or train Institute staff to provide direct services.

The Evaluation Institute was also expected to use external contractors for many tasks. Since test construction is a highly specialized skill, the Student Assessment Office would need outside expertise. However, Institute staff might be trained to support and maintain the assessment program (e.g., monitoring, auditing, and updating). The School Evaluation Office could hire contractors instead of permanent staff to gather data from the schools. The Data Collection and Management Office would need to hire large numbers of data collectors to work intensely during specific periods (e.g., when the national tests were administered). Again, the extent of contractor involvement in the Evaluation Institute would need further consideration once the Offices were established and operational.

Timing

The plan was based on a phased approach consisting of three distinct but overlapping phases (see Figure 5.2). The Independent school system would be built parallel to the old system in a way that would mini-

Figure 5.2
Timeline of Reform Phases



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mize disruption. The existing Ministry and most schools would remain unchanged in the early phases of implementation.

Phase I was to begin in Fall 2002. In this phase, the Implementation Team would establish the Education and Evaluation Institutes by hiring key personnel and physically establishing the Offices. The Institutes and Offices would complete a number of key tasks to build the organizational and policy infrastructure needed to support the opening of the first Independent schools in September 2004. The legal authority of the SEC and Institutes would need to be established. This phase would include development of key products to support the reform—curriculum standards, standardized national tests, and a national education data system. The design recognized that these products would be beneficial to the education system in Qatar whether or not the move to Independent schools was successful. Baseline data on students and schools would also be collected during this phase.

Phase II was to begin in early 2004 with the first national administration of student tests and school evaluation surveys, which were intended to generate a baseline picture of the education system. Then, in September 2004, the first Independent schools would open. After

this first generation (or cohort) of Independent schools, each subsequent year would see the opening of another generation of Independent schools. The specific numbers of schools opened would depend on the ability to identify and contract with suitable school operators. This phase could take from three to seven years.

Phase III was when the elements of the new system would be integrated. At this point, the Qatari leadership would have to determine whether the entire education system would retain its parallel structure. It might be that the Ministry would be eliminated or reduced in size and that the system would evolve to a voucher model. The decision would depend on the course of the reform and the Ministry's response to the reform. If the reform proved successful and rapid, Phase III could begin as early as Fall 2007, three years after the opening of the first Independent schools. Alternatively, the decision about system integration could be postponed for ten years or more.

RAND developed tasks and timelines within these three broad phases. In general, RAND considered that the sequencing of the tasks was more important than their completion by a prescribed date, because it was important to allow for flexibility in planning. Some tasks, however, were to have tight deadlines, as they were prerequisite to completing other tasks.

The Phase I implementation plan specified a set of benchmarks that would allow some judgment about whether the reform was on track. In the early stages, these benchmarks would emphasize process indicators rather than measurable outcomes. Although the reform's ultimate success would be judged on the basis of improvement in Qatari student outcomes—academic achievement, college attendance, success in the labor market—several years would be needed to experience and measure these effects. Benchmarks for Phase I would include completion of such key products as the curriculum standards, new national tests, and a school financing formula aligned with student needs.

The Qatari leadership understood that the reform would entail considerable initial investment. In Phase I, new institutions would require staff and facilities. Although staff numbers would remain small, the Institutes would need to offer competitive salaries and benefits to attract the best possible applicants. The development of key products

(e.g., curriculum standards, national tests) would require large external contracts. Costs in Phase II would depend on the number of Independent schools in operation. Independent school costs might increase relative to Ministry school costs because of the need to support upgraded facilities, smaller class sizes, or higher pay for teachers. In Phase III, costs would partly depend on the fate of the Ministry (e.g., a downsized Ministry would reduce system costs overall).

Potential Challenges

Implementing a system-changing reform is never easy. The fundamental principles of the Independent School Model—autonomy, accountability, variety, and choice—were completely new to the education system in Qatar. Adopting and sustaining these principles would require significant behavioral changes on the part of school leaders and administrative staff, teachers, parents, students, public and private employers, the existing education institutions, and other system constituents.

Although the obstacles (and opportunities) could not all be anticipated in advance, RAND attempted to define key areas in which implementation might prove difficult and to address them in advance as much as possible. Thus, the overall plan was designed to minimize risks and produce useful products early on. As we discuss further in Chapter Seven, some of these anticipated challenges materialized, and some did not; some proved more difficult to overcome than others; and some unanticipated challenges emerged.

Maintaining a System-wide Perspective

The broad sweep of the reform called for new institutions and major programs, such as those for curriculum standards, assessments, and reporting. Since these programs would be the responsibility of different organizations, a focus on the entire system had to be maintained.

The design of the reform was to promote this system-wide perspective at several levels. The SEC and the Implementation Team would have general oversight and would monitor progress and suggest midcourse adjustments as needed. The SEC would have authority over the

Institutes, which in turn would coordinate their Offices. RAND staff would be working alongside staff in all new organizations to reinforce the fundamental principles of the reform, train and support Institute staff, and provide advice. These processes would help to ensure that all efforts aligned and that the reform as a whole stayed on track.

Building Human Resource Capacity

Qatar has a small population and has many demands on its human resource supply. As a result, there are few personnel available for a new initiative such as this one. In addition, few Qataris have worked in the private sector; most have experience in the government sector and are accustomed to working in hierarchical, fragmented, and rule-bound organizations. Teachers are used to following rules and regulations and receiving little in the way of professional development. They are not prepared to teach in schools that will be adopting curriculum standards, diversifying instructional practices, and monitoring school performance at the national level. The literature on implementation routinely cautions that a lack of human resource capacity can be a significant deterrent to success (McLaughlin, 1990, and the related works cited earlier, in Footnote 1 of this chapter).

The design of the reform attempted to counter the lack of human resources in several ways. The new institutions would remain small, capitalizing on contracted expertise where needed, with the Institute and Office directors constituting a core management group. Directors would be carefully recruited and selected and would be given a common orientation and ongoing training by RAND. To form a cohesive, committed group, it would be necessary to identify and recruit top individuals within Qatar and internationally and to compensate them adequately.

Professional development would be provided to teachers and others in several ways. The Professional Development Office would focus on human resource needs for the Independent schools, especially for teachers. As discussed earlier, this could include direct or contracted provision. An orientation and training program for Institute staff would be developed and conducted. Institute staff might also go abroad to attend conferences, workshops, or similar activities.

The precise nature of the professional development opportunities would be based on the outcomes of needs assessments and cost-benefit analyses to be carried out by the Professional Development Office and RAND. The lack of a teacher-training program in Qatar was seen as a significant obstacle. Clearly, the reform would need multiple ways to prepare teachers to teach in the Independent schools.

Finally, contracted activities would incorporate capacity-building plans. Contractors would be required to adopt strategies to actively involve Institute staff in their work through training, mentoring, and collaboration.

Engaging Stakeholders Through Communication

It was clear that the reform would succeed only if Qataris supported it. Qataris would have to step forward as operators to open Independent schools. Parents would have to use the information provided to decide which schools their children would attend. Educators would have to express a desire to innovate and operate more autonomously. The reform thus needed a communication strategy specifying how the new initiative would be presented to decisionmakers, educators, and the broader society. This strategy would have to incorporate mechanisms to entice key constituencies to become more actively involved in the education system.

The communication strategy would need to acknowledge several different goals and audiences and vary the messages and means of communication appropriately. Parents, for example, would have to be educated about the concept of the Independent schools and the opportunity they were being given to choose, and would need information about the performance of Independent schools. Employers would want to know how the reform would produce higher-quality graduates.

The communication strategy would also need to be adapted to Qatari culture. For example, it had to be sensitive to Qatar's education history and respectful of cultural imperatives (e.g., who should be informed first) and cultural realities (e.g., how news travels). In addition, it had to take into account the way that Qataris relate to schools, to authority figures, and to the media, as well as the ways in which people deal with change and think about progress. Consequently, the

SEC and the Institutes would be responsible for guiding the communication strategy. The Communications Office would report directly to the SEC.

The communication strategy would need to reach a variety of audiences for different purposes. It thus would have to adopt different modes of communication, such as briefings, newsletters, web-based materials, television, and other public relations activities. Decisions in this area would be left to the Qataris charged with overseeing the strategy. The reform's implementation strategy incorporated some principles that might be considered in devising the communications plan:

- Begin with a "big picture" discussion and a long-term plan that extends through the early implementation years and specifies how information is to be conveyed, to whom, and when.
- Explain the value of the reform goals. Help audiences understand why the reform is being implemented, who will benefit, and how.
- Establish credibility for the reform. Demonstrate that influential Qataris support it. Obtain their support early on and make them visible in an ongoing communication strategy.
- Address likely concerns. The reform will have effects that raise different kinds of concerns. For example, poor school performance will be known and will affect principals and teachers; students may need to work harder; Ministry staff may worry about being displaced.
- Set performance benchmarks and monitor the communication strategy on a regular basis.

The reform's implementation strategy also incorporated built-in mechanisms to support communication:

- Credibility and high-level support in the form of a senior Qatari leader who would head the SEC and figure prominently in any communication strategy
- Staff with specific responsibilities for communicating with key stakeholders

- An open internal communication policy for the new institutions (SEC, Implementation Team, Education and Evaluation Institutes).

Encouraging Operators to Open Schools

The reform's success would rely largely on finding parties willing to contract with the SEC to open Independent schools. Because the market for establishing Independent schools was unknown, the design incorporated strategies for encouraging operators and schools to seek Independent school status. To ensure the greatest number of qualified operators, the plan specified no eligibility restrictions for Independent school operators—selection was to be based solely on the content of an applicant's educational, financial, staffing, and facilities plans. Eligible operators could therefore include businesses, individuals, home schools, distance learning organizations, private schools, co-educational schools, and Ministry schools. Accordingly, the design permitted schools to be established through different routes, thus providing opportunities for recruiting a variety of potential operators:

- *Convert the scientific complex schools*. The implementation plan recommended that the established complex schools (discussed in Chapter Two) convert to Independent school status. These schools already offered an alternative education program that in some ways aligned with the reform (e.g., staff worked cooperatively with each other and independent of the Ministry). Legal authority would have to be established to transfer these schools from the Ministry to the Education Institute, with the schools' advisory boards acting as "operator."
- *Convert other Ministry schools*. The Independent School Office would approach other Ministry schools (selected by such factors as geography, reputation, and test scores) to determine their interest in applying for Independent school status. Operators could include parents, teachers, and/or principals through a school advisory/governing board, existing Qatari institutions (e.g., Qatar Petroleum, Qtel), new Qatari organizations, private school operators, or foreign education-management companies.

- *Convert existing private schools to Independent schools*. Private schools could apply for Independent school status. Converted private schools would be reimbursed for educating those students eligible for free government schooling. These schools could also continue to accept fee-paying students.
- *Establish new schools*. Operators for new schools could include existing Qatari institutions, new Qatari organizations, private school operators, or foreign education-management companies.

The Independent School Office staff would meet with interested parties to help them decide whether to apply for Independent school status and to encourage promising candidates. Staff would provide support for completing the application, including offering sample educational, financial, staffing, and facilities plans; they would also work with existing schools to develop a transition plan. These types of support activities would encourage interested candidates to go through the application process. The design also recommended that during the first five years of the reform, all Independent schools be provided with facilities and maintenance comparable to what existed in current Ministry schools. Such a policy should help attract new operators and allow them more time to focus on their education program.

Managing a Very Short Time Frame

Last, the goal of opening new schools in September 2004 would be very challenging given the scope of the needed changes and the issues that had to be addressed, as just discussed. However, the Qatari leadership was anxious to reform the system as quickly as possible and to show tangible results to the public. As one way to meet the desired time frame, the implementation strategy incorporated mechanisms for monitoring progress. The Phase I tasks and timelines would be worked out in detail and include target task-completion dates and benchmarks to allow informed mid-course corrections. The Implementation Team, with support from RAND, would monitor the implementation process continuously to ensure that tasks were being completed on time.

Implementing the Independent School Model: Phase I

In September 2002, the Implementation Team and RAND began working on implementing the Independent school reform in earnest. The next four chapters, Six through Nine, describe some of the implementation process in Phase I, covering Fall 2002 to Fall 2004, when the first generation of Independent schools opened. These chapters focus on four selected elements of the reform design that were central to changing the education system in Qatar: building the organizational structure, developing curriculum standards, developing the assessment system, and opening the Independent schools. Each chapter highlights progress made and modifications to the original design that were made along the way. There were many other elements of the implementation that this volume covers only briefly, such as the design of the data system, communication with the public, and school report cards. The RAND team and Institute staff plan to produce a series of articles describing more of these elements to the interested communities.

Once the organizational structure was formed, development of the other three elements proceeded more or less simultaneously. The refined design and the implementation strategy described in this chapter served as the blueprint for Phase I of the reform's implementation. The discussions in Chapters Six through Nine illustrate the remarkable accomplishments that were made in a very short time. Chapter Ten reviews the challenges of implementing a complex reform on a fast-paced schedule.

CHAPTER SIX

Building the Organizational Structure

An essential first step in implementing the school system reform was to establish a new institutional framework. But even before a new organizational structure could be established, a new legal structure had to be put in place, one that would serve to formally define and to empower the agencies charged with formulating education policies and initiating and monitoring the reform. This entity was to be the Supreme Education Council (SEC). It would oversee two new institutions—the Education Institute and the Evaluation Institute—and thus oversee the reform. It would also oversee *all other* education enterprises in Qatar, including the Ministry of Education.

In Qatari law, the instrument for enacting legislation is the Emiri Decree. Development of the decree involved intense discussions about the scope of the SEC's responsibilities and powers, the roles and functions of the new Institutes, the scope of the SEC's authority, the levels of education to be included, oversight responsibilities, budgetary mechanisms, and other policy considerations. RAND provided input and suggestions, coordinating with the Emiri Diwan in the drafting of the decree.

In November 2002, the "Law Decree No. (37) of the Year 2002, Establishing the Supreme Education Council and Delineating its Jurisdictions," was enacted, paving the way for the reform's activities to proceed. In March 2003, the reform was publicly launched as *Education for a New Era*.

Once the Emiri Decree was enacted, an Implementation Team was formed by expanding the original Coordinating Committee mem-

bership and formalizing its responsibilities. The Undersecretary of Education and the RAND project director co-chaired this team, which took responsibility for

1. Recruiting directors for the Education and Evaluation Institutes and members for the SEC
2. Designing the organizational structure, size, and functions of the SEC and the Institutes
3. Putting the structure in place
4. Establishing a physical location and facilities from which the reform would be coordinated.

Establishment of the Supreme Education Council

As the new education authority for the nation, the SEC would oversee a number of important decisions that would determine its relationship to the Institutes, the Ministry of Education, and the public. The composition of this council was of extreme importance since the council had to be credible in support of education reform, had to generate high-level buy-in among Qataris, and had to be acceptable to the Ministry. It was designed to have at least seven members who would serve for three-year renewable terms and meet monthly.

The SEC was officially formed in January 2003, and its level of importance was reflected in its membership. It was headed by the Crown Prince and Heir Apparent, His Highness Jassim Bin Hamad Al Thani as chair,[1] and Her Highness Sheikha Mozah Bint Nasser Al Missned as vice chair. The other members were six additional influential and committed individuals, all from government, business, or higher education, including the Minister of Education. In general, these members represented the perspective of the consumers of the K–12 system. This was a deliberate departure from the practice at many education policy organizations, such as the Ministry, which are led and

[1] In August 2003, the Emir named Tamim Bin Hamad Al Thani as Heir Apparent, to replace his brother, and he then became Chair of the SEC.

managed by educators rather than by the consumers of the education system's "products."

The SEC met for the first time on March 3, 2003. During the early months, it developed its board-level policies and procedures (e.g., the structure of both its internal and its external operational interactions). In April 2003, RAND provided SEC members with a two-day formal orientation on the principles of the reform, the tasks ahead for the Institutes, and the important role the SEC would play in the national education reform process.

Establishment of the Institutes

The establishment and development of the Education and Evaluation Institutes required a broad range of activities. The following discussion focuses on several of the most practically and conceptually significant activities during this period: recruiting leaders, establishing facilities, coordinating support for the Offices within each Institute, and implementing an organizational structure that would sustain growth and support change.

Leadership for the Reform

Identifying and recruiting qualified and credible people for key leadership roles in the Institutes was crucial for success of the reform. From the beginning, it was clear that leadership needed to be drawn from both Qatari society and the international labor market. The Implementation Team thought that the two top positions—the Institute directorships—should go to Qataris who understood and shared the vision and philosophy expressed in the reform goals and principles and would act as spokespersons for the reform to the public. Qatari directors would be much more credible as spokespersons and would send an important signal that the reform was fundamentally a Qatari initiative even if many of the reform staff were non-Qatari, which seemed likely.

The recruitment of candidates for the eight Office director positions entailed both local and international searches for individuals with expertise and experience in managing education institutions and

implementing institutional change. Office staff selection was left to the individual Office directors to enable them to build the teams they needed to accomplish their missions.[2]

RAND and the Implementation Team worked together to develop position descriptions and interview protocols and then to identify and interview candidates for the primary leadership positions. The Implementation Team also made the decision to place the communications function in a Communications Office headed by a Communications Coordinator and reporting to the SEC and Implementation Team. By January 2003, the two Institute directors, the Communications Coordinator, and two of the Office directors were in place, and some Office staff had been hired. Most of the remaining Office directors were recruited and hired by July 2003.

In January 2003, the newly hired leaders took part in a formal five-day orientation conference in the United States, at RAND's Santa Monica, California, headquarters. The orientation had two main purposes: to communicate the concepts, principles, and vision for the reform and to provide the foundation for ongoing working relationships among the Institute staff and the RAND staff. It emphasized the overall goals of the reform, its institutional structures, the role of the Institutes as change agents, and operational details such as key tasks, personnel needs, and projected timelines.

The orientation employed an open discussion format designed to encourage participants to think about and debate the many issues and decisions entailed in moving forward. The process intentionally supported a collaborative and open approach to discussion, problem solving, and decisionmaking, and provided the opportunity to discuss the advantages and disadvantages of various policy options and to outline key activities to pursue.

This initial orientation was followed by another five-day conference, in July 2003, as the leadership team expanded. This event allowed

[2] Directors were also responsible for training their staff. Training and mentoring were to occur on the job, carried out by the directors, the specialists working in the Institutes, the experts hired as contractors, and the RAND team. Staff also had opportunities to travel to other countries to visit schools and attend conferences.

new members of Institute management to be introduced to the reform principles and for all to discuss the tasks in progress.

By Spring 2003, the Institutes employed about 160 core resident staff working in three separate buildings at one site. The rapid growth of the Institutes called for some modifications to the organizational structure. The Institutes commissioned Ernst & Young to review the organizational structure, after which RAND conducted an analysis and review. As a result of the reviews, functions such as human resources, procurement, finance, and contractor support were consolidated into a new organization, Shared Services, to serve both Institutes.

External Support for the Institutes and Offices

In August 2002, RAND began assembling teams of researchers and other experts to provide assistance to the new Institutes as they developed into self-sufficient entities, capable of supporting and expanding the innovations of the education reform. RAND also recruited new staff, including researchers with Arabic language skills and regional experience.

For each of the eight Offices, a RAND team was formed and began working on issue-specific research and analyses. This work began even before the Institute directors had been hired or the legal authority for the Institutes had been established. Some of the tasks the RAND support teams performed during this period were

- Drafting guidelines for Independent school contracts
- Analyzing the teacher labor market
- Evaluating different professional development options
- Designing an assessment system
- Recommending indicators and formats for school report cards.

These analytic tasks represented an essential component of the plan's evidence-based approach to implementation of the reform. These and other tasks would contribute directly or indirectly to key reform components. Some of these tasks are discussed in more detail in later chapters.

Work commenced on several Office-related tasks simultaneously, demanding active coordination and regular communication among the RAND Office teams and the new staff in the Offices.

In September 2002, RAND established an on-the-ground presence in Doha, Qatar. Then, as the implementation process proceeded, RAND transferred U.S.-based staff and recruited new team members to live and work in Doha.

The RAND team grew and adapted to changing needs on the ground as the work evolved. In the initial design phase, a small team composed of non-resident experts had traveled to Doha for one or two weeks at a time. By Fall 2002, the team had grown to 20 employees who were dedicated full time or nearly so and another 20 part-time employees. By 2004, the team had 60 members. Almost every team member visited Doha at least once, and many senior staff traveled frequently to Qatar for trips of one to two weeks up to ten times per year.

In addition to providing for the RAND team, the implementation strategy provided for the possibility of hiring contractors, especially to assist in certain aspects of the reform for which specific outside expertise was crucial, such as designing curriculum standards and assessments. By February 2003, RAND developed guidelines for the Implementation Team that outlined a process for recruiting, selecting, and working with contractors. RAND also directly assisted in many aspects of the process: defining tasks and recommending best approaches, developing requests for qualifications (RFQs) and requests for proposals (RFPs), identifying qualified vendors, interviewing potential contractors, evaluating proposals, and negotiating contracts. The relevant Institute and Office directors collaborated in this process. Since RAND maintained an oversight and quality assurance role for the project as a whole, it worked closely with these contractors to help them adjust to the Qatari environment, monitor their work process, provide them with background information on the reform, and facilitate their work. Over time, the Institute directors and staff took increasing responsibility for managing the contractors and their tasks.

Facilities for the Institutes

For a project with the scope and scale of Qatar's education reform, a central site and facilities that would allow for phased growth were needed. At the same time, however, it was important to recognize that the design purposely separated the Education and Evaluation Institutes as organizations. The solution was to house the two Institutes at the same location, to promote operational efficiency and easy collaboration, but in separate buildings. The search for appropriate office facilities began in September 2002. The selected location, originally developed as a school site, met the basic requirements for the Institutes. Institute and RAND staff worked in temporary office space while the building was modified to meet the Institutes' specific needs. By April 2003, the permanent facilities were ready, and the Education and Evaluation Institutes occupied two adjacent buildings.

Summary

During Phase I, a team of Qatari and international professionals brought the reform's organizational structure into being. The SEC, Implementation Team, Institutes, and Offices were established and operational. The Institutes had leaders, support staff, and facilities and continued to recruit for the positions that remained open. Institute staff and RAND teams worked to complete key tasks and to build the evidence base for other tasks. Together, they established crucial processes for involving the outside contractors needed to accomplish specific assignments.

In less than a year from the Qatari leadership's decision to initiate the reform, its structure had been established and it was essentially in operation.

CHAPTER SEVEN

Developing the Curriculum Standards and Supporting Their Implementation

Challenging standards were an essential element of the reform's design in that they would provide the basis for the standards-based education system and would define expectations for student learning and performance. These standards, which would include both content standards (what students should be taught in each grade) and performance standards (what students should know by the end of each grade), would promote variety and autonomy because they very scrupulously would *not* dictate, or even propose, the curriculum itself, nor prescribe how information and skills were to be conveyed. Which textbooks to use, which pedagogical approaches to promote, which instructional strategies and lesson plans to employ—all of these decisions would be left to the individual Independent schools. National assessments, aligned with these standards, would in turn provide information about student performance for schools, parents, principals, teachers, the Education Institute, and other policymakers. And teachers would have to be provided with the professional development needed to learn how to design and convey instruction in a standards-based environment.

This distinction between standards and curriculum had not previously been made in Qatar, where standards were an implicit part of a national curriculum developed, mandated, and overseen by the Ministry of Education. As discussed in Chapter Two, this uniform curriculum was closely followed by all government schools and closely monitored by the Ministry.

The reform design recommended that content and performance standards be developed in four subjects: Arabic, English, mathematics, and science. As the national language, Arabic was an obvious choice. English was deemed important for use in the labor market and to prepare students for postsecondary education abroad. Mathematics and science were seen as important because of the modern world's emphasis on the sciences and technology. In addition, the design team anticipated that the standards development process would be far less controversial for mathematics and science than for the social sciences and humanities, and thus less likely to delay or threaten the reform. The national tests would assess students in these four subjects only. Independent schools would be free to develop the rest of their instructional program as they wished, which would promote further variety among schools.

Limiting the standards development to these four subjects initially met with some resistance. The most frequently voiced concern was the exclusion of Islamic Studies (Sharia). Some people perceived the non-inclusion as a threat to this subject and worried that Independent schools would not teach subjects not included in the national assessments. The design required Independent schools to specify their instructional program, thereby providing a check on operators that might be tempted to over-emphasize the four core subjects in order to improve students' chances on the national tests. The SEC, in fact, mandated that all Independent schools offer Islamic Studies.

Curriculum Standards Development Process

Originally, RAND proposed that it would develop the curriculum standards and hired a curriculum specialist to identify, select, and oversee the work of subject matter experts. It quickly became clear, however, that hiring enough experts to carry out the development activity in a timely way would be extremely difficult. Therefore, the Education Institute and RAND worked together to identify a suitable contractor, using an RFQ followed by an RFP. The RFP specified development of curriculum content and performance standards in Arabic, mathemat-

ics, and science for grades K–12. Standards for English as a foreign language originally were to begin in grade 3, but this was changed to grade 1 before the contract was signed. The successful bidder had to be prepared to cooperate with the test development firm that would be hired to design assessments aligned with the standards. Bidders were invited to propose a workable timetable for producing the standards and supporting materials (e.g., sample lesson plans) and were asked to indicate how they would ensure that the new standards would be comparable to the highest international standards.

The process of developing the curriculum standards was accelerated to accommodate the Qatari leadership's desire to open new standards-based schools in September 2004. But even with an accelerated schedule, the standards could not be completed until January 2005, which, although not ideal, ensured that the new schools could begin implementing the standards in their inaugural year. The RFP specified that draft standards be made available as they were developed so that schools would be familiar with them by the time they were finalized.

In May 2003, the Education Institute staff and RAND selected the Centre for British Teachers (CfBT), an organization with much experience designing curriculum standards in the United Kingdom and other countries.[1]

The CfBT team had extensive expertise and experience in developing standards at the national level. Three of its subject area teams conducted an international benchmarking exercise as an initial step in the development process. This benchmarking exercise resulted in the identification of key standards considered crucial to student learning in each area. The grades in which the key standards appeared in different countries were profiled and compared to the existing curriculum in Qatar. The most important differences were as follows:

- The Qatari mathematics curriculum had noticeable gaps in the areas of mental arithmetic in grades 1–8 and in problem solving

[1] As of this writing, the preferred name for this organization is the CfBT Education Trust rather than the Centre for British Teachers. We use the name CfBT throughout this report.

in all grades, with too little emphasis on algebra and geometric reasoning in grades 7–12.
- The science curriculum heavily emphasized scientific knowledge at the expense of developing the process skills needed to undertake scientific inquiry and practical work.
- English lacked a progression through a defined range of text types for reading and writing and for speaking and listening, as well as a sufficiently demanding approach to grammar and to reading and writing strategies.
- The use of information and communications technology was under-developed in all subjects.

It was not possible to conduct this exercise for Arabic, since Arabic is not widely taught outside the Middle East and there are no international tests for Arabic. Nevertheless, it was possible to look at the way that English is taught as a first language in English-speaking countries and to draw some parallels. In addition, the Arabic team surveyed Arabic language curricula in Qatar and other Arab countries (Egypt, United Arab Emirates, and Jordan) and reviewed Qatari textbooks and curriculum documents when available.

This survey found that Arabic teaching practice has two notable features. The first is that one of several elements of Arabic language teaching is the common requirement that students learn complex Arabic grammar. Arabic linguistics scholars conclude that this complex grammar complicates both teaching and learning without necessarily providing students with fluency in the language. Indeed, these complications leave some students unable to read and write well in their native language. The second feature is the tendency to treat texts of all types in a rote and unquestioning manner. This tendency constrains students from exercising certain important skills, such as questioning and critical thinking, in their native language.

CfBT asked the Education Institute to convene working groups in all four subjects. It was agreed that each group would have 20 members: four primary teachers, four secondary teachers, four Ministry curriculum specialists, and eight Ministry supervisors. Each group needed to have enough teachers to ensure classroom-level feedback

on the standards throughout the development process. CfBT led the working groups, which had an important role in ensuring the cultural sensitivity of the standards and in resolving translation issues. The science working group meetings were enhanced by input from other local groups, such as The Friends of the Environment and The Scientific Club, and contacts with local industries, such as Qatar Petroleum and RasGas.

The grade placement of the key standards in the new curriculum standards for Qatar was developed by consensus that included the teacher working groups. This set forth a framework for building the remainder of the curriculum standards.

Throughout the development process, CfBT met with its working groups for two days about every six weeks.[2] In these meetings, a number of issues were raised and addressed. For example, the working group for science spent some time discussing the topic of evolution because of the potential conflict existing between the teaching of evolution and traditional teachings of Islam. The group determined that the standards would have to be carefully phrased to ensure that they did not take a position on the concept of evolution, but that teaching the topic should stimulate debate. The working groups were also assigned tasks. The science group, for example, was asked to identify key Islamic scientists whose roles and discoveries could be incorporated into sample instructional material.

The new Arabic standards would incorporate two departures from established practice. First, they would emphasize practical language skills and grammar rather than the traditional, complex Arabic grammar common in other Arabic teaching. Second, they would promote questioning and critical thinking using a wide range of texts. Schools could meet the new standards by employing such materials as literature, newspapers, magazines, and job applications; they could also use sacred texts. The standards would expect teachers to promote critical thinking skills by providing opportunities for students to learn them.

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[2] Between these meetings, there were meetings with the CfBT in-country coordinator and Curriculum Standards Office staff. Working groups worked on specific tasks, with feedback provided via email.

Although it was controversial to do so, the Institute leadership and the Arabic working group concurred with the plan and agreed that the Arabic standards represented a qualitative advance in both Arabic education and the use of the language as a tool for learning and cognitive development.

The novelty of the approach and the potential sensitivity meant that Arabic standards development took somewhat longer than standards development for the other subjects. In addition, implementing the Arabic standards would require more work than implementing the standards for the other subjects for three reasons:

1. The needed texts, textbooks, and other instructional resources were less readily available and therefore might need to be developed.
2. Teachers would need focused pedagogical support to develop new teaching approaches because they might find it more comfortable or be pressured to teach Arabic in traditional ways.
3. A clear, but sensitive distinction between the teaching of religion as a separate subject and the teaching of Arabic needed to be spelled out in the standards document.

Key Issues in Standards Development

A number of issues that arose during the process of developing curriculum standards may hold lessons for other nations with curricula similar to Qatar's. The most significant issues were how much instructional time would be available, whether specialization would be encouraged in secondary schools, and how the quality of the standards themselves would be judged.

Instructional Time

A major concern was that the new standards, which were comparable to international standards outside the region, would be too challenging for Qatari students. The Institute leadership was unwavering in supporting higher standards but also recognized that adopting them would

present a significant challenge. CfBT estimated the instructional time needed to teach enough material to meet the new standards, and these estimates exceeded the available instructional time in Qatar. The typical Qatari school day is about five hours long (from 8 a.m. to 1 or 1:30 p.m.) in order to accommodate a traditional family afternoon meal.[3] The Education Institute carried out further research and produced a September-to-May calendar showing the actual instructional days in schools. This calendar was a revelation. It identified an entire month with no instructional time at all, and two months in which instructional time for secondary students amounted to about 40 percent of total possible time.

CfBT recommended that an absolute minimum of 180 days would be needed to make it at least theoretically possible to teach enough material to meet the standards. The Education Institute decided that the Independent schools must incorporate at least 180 days of instructional time per year. This decision was not without some risk, since parents might object to the longer school year and consequently not enroll their children in Independent schools.

Secondary-School Specialization

The RFP specified that standards be developed for each of the four subjects in each grade. CfBT raised the issue of specialization in secondary schools, which is a common practice in upper-secondary education in most countries. CfBT argued that it becomes increasingly difficult to teach mixed-ability classes as students get older. Some students grasp ideas quickly and want to work at a fast pace, whereas others take longer to absorb new concepts. By age 14 or 15, some students will inevitably have reached a higher level of attainment than others and will have studied the content to greater depth. The range of attainment at this age is most marked in mathematics and science. While it is possible that some less-able students will leave school and seek employment at this age, those who remain will still have reached markedly different levels of attainment.

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[3] The working day in government offices follows a similar schedule for the same reason.

CfBT proposed that standards for grades 10–12 be organized along two pathways rather than grade by grade. After a number of options were considered, it was decided that all students would follow a common curriculum as a base in each of the four subjects, with extension options for those who wished to pursue them. The basic, common curriculum is defined by "foundation" standards; the extension options by "advanced" standards:

- Foundation standards would include review and consolidation of standards for earlier grades, as well as some new material. The foundation route would still prepare students for the university and for further education.
- Advanced standards would include extra content and more in-depth study of foundation-level material (e.g., more-challenging topics, more-demanding critiques of texts). Students who chose the more-academic, advanced pathway and were successful would be prepared to attend the best universities in the world.

Standards would be set out for a three-year period, subdivided into strands of the curriculum (e.g., science subdivided into physics, chemistry, and biology; mathematics subdivided into numbers, algebra, calculus, geometry, trigonometry, and statistics). The standards in each strand would be organized to become progressively more challenging.

This decision to differentiate standards starting in grade 10 had important implications for the development of national tests (see Chapter Eight).

Evaluation of Standards

As the curriculum-standards development process moved forward, RAND recommended that international experts from the region and elsewhere review the draft standards. While the quality of the standards was not an issue, a review process would enhance their credibility and help identify potential implementation problems. CfBT welcomed this review, which would cover each subject as well as comparisons across subjects. RAND organized a review process in which 21 reviewers received the draft standards pertaining to their area of expertise,

and four reviewers undertook cross-subject reviews. The cross-subject review made sure, for example, that scientific terminology used in science classes taught in English was introduced in the English curriculum before or at the same it was used in the science classes. The group of reviewers included experts in each subject who could judge the standards' cultural sensitivity and appropriateness. The overall response to the standards was very positive. CfBT made changes to the draft standards based on feedback from this review.

Support for Standards Implementation

The blueprint for the reform specified that teachers would need professional development in order to teach in a standards-based system that promotes new ways of teaching. However, it did not specify exactly how professional development would be carried out, instead leaving the Education Institute to determine the best approaches. Two main activities were initiated during Phase I to assist standards implementation: an initial teacher-training program and expert support for the Independent schools.

Initial Teacher Training

The SEC asked RAND to work with the Education Institute to develop an initial teacher-training program that could begin in September 2003. In July 2003, CfBT (jointly with the University of Southampton) responded to an RFP and was awarded the contract to design and implement the Teacher Preparation and Certification Program (TPCP). The purpose of the TPCP was to introduce teachers to a range of teaching strategies, methods for planning and assessment, and ways to incorporate learning technologies in the classroom, as well as to enhance their content knowledge. The program included an in-school teaching experience component.

The program had over 400 applicants, of which 78 were selected. This group was 83 percent female, and many of these women were experienced teachers with various teaching backgrounds (e.g., computer science, home economics, Islamic studies).

In June 2004, 68 teachers graduated from the TPCP. Of these, 44 percent were hired as teachers in the Independent schools and 28 percent became teaching assistants in the Independent schools. The remaining graduates returned to teaching positions in the Ministry schools (about 13 percent) or were not employed. The Program Development Office later hired two TPCP graduates.

The TPCP experienced challenges from the beginning, partly stemming from the speed of implementation. Some of the challenges were finding adequate space to hold the classes given the many concurrent demands of the new reform, recruiting teachers with enough English language skills to benefit from the classes, hiring the best tutors and subject-matter experts, and keeping the courses aligned with the design.

Both RAND and the Project Development Office initially did not monitor the TPCP closely enough to appreciate and remedy the challenges. Although attempts were made to improve the program, the Education Institute eventually decided to discontinue it after its first year and to seek other options for training teachers for the Independent schools. Even with its challenges, however, this early experience offered valuable lessons to the Program Development Office and to the professional development providers who would come later.

Support to Schools

As we discuss more fully in Chapter Nine, each of the first generation of Independent schools (i.e., those schools slated to open in September 2004) was matched with a School Support Organization (SSO) to provide start-up advice and professional development training to teachers and administrators. These SSOs had many responsibilities related to the schools.

In meetings with the school operators and SSOs in Spring 2004, it became clear to the Institute leadership that while the SSOs might have the skills and experience needed to provide standards implementation support to their schools, they also had many competing responsibilities related to helping the schools open—for example, overseeing renovations, orienting teachers, buying furniture, and assisting school operators in strategic planning.

The Institute agreed that special support was needed to implement the standards, at first for Arabic only, and later for all four subjects. The Institute engaged CfBT to provide standards implementation support in the other three subject areas. The agreement with CfBT focused on four main tasks:

1. Provide professional development training for teachers, instructional leaders (in coordination with SSOs and their professional development plans and with Education Institute and Curriculum Standards Office staff).
2. Design and provide schemes of work.
3. Work with the operators of the next generation of Independent schools (Generation II, scheduled to open in September 2005) on their development of educational plans for their schools.
4. Evaluate the educational plan section of the Independent school contracts for the next generation of Independent schools.

These tasks were to be carried out from July 2004 through October 2005. As the final version of the standards would not be available until January 2005, the SSOs and Independent schools worked with standards in draft form for the first semester. These standards had already gone through much review and revision and, as it turned out, needed no significant alteration to become the finished product. The participants and the Education Institute judged the standards implementation support training as highly useful.

Summary

The development of new curriculum standards for Qatar in Arabic, English, mathematics, and science was a significant step in Phase I, since the standards were an essential element of the reform. In addition, the process of developing the standards provided a forum for resolving some key questions about schooling in Qatar and helped set high expectations for what the Independent schools needed to accomplish.

Given how rapidly the project was undertaken, the smoothness with which standards development proceeded is remarkable. As a result of this process, Qatar has a set of curriculum standards for grades K–12 that are benchmarked against the best standards in the world. This is a significant accomplishment for Qatar, and a first for the region. The standards in mathematics, science, and English as a foreign language are similar to the best standards in the world. That alone is an accomplishment Qatar can be proud of. Moreover, the Arabic standards that were established represent something entirely new in education: a standards-based approach to teaching Arabic as a functional native language using either religious or non-religious texts. These standards will serve students in Qatar and, if implemented elsewhere, could also benefit students in other countries in the region.

The new curriculum standards also provide the framework that enables Independent schools to adopt different curricula while still aiming at the same high national standards. This potential for different curricula illustrates the principles of autonomy and variety, two key principles of Qatar's reform. The curriculum standards enable autonomy and variety while also providing for accountability, another key reform principle. They set forth the learning objectives for each subject, many of which are measured by the assessments (described in the next chapter) that are the basis of the accountability system.

CHAPTER EIGHT

Developing the Assessment System

Enhanced assessment was a key element of the Qatari education reform. Objective measurement of student achievement according to the curriculum standards is what allows participants at all levels of the system to make improvements. School operators, principals, teachers, parents, employers, colleges, universities, and national leaders—all of these participants can use information from an assessment system to understand trends in student performance over time. Measurement extends beyond testing, however. Participants can benefit from objective information about behaviors within the education system (such as teaching practices) and perceptions of the system (such as parental satisfaction). With effective measurement tools, the education system obtains the data needed for continuous improvement.

In particular, parents benefit from information about school characteristics and performance in exercising the choices provided by the Independent School Model. In focus groups conducted by RAND in February 2003, parents in Qatar indicated that school achievement was likely to be a crucial factor in deciding which school to select for their children. However, no objective achievement information about schools in Qatar was available to parents at that time.

This chapter discusses the purposes, development, and evolution of the testing system. It covers the development of the assessments leading to test administration in Spring 2004; it also covers the development leading to testing in 2005, even though it occurred outside the time focused on in this monograph. Our reason for including this later effort is to provide a fuller picture of the assessment system's develop-

ment. Also included in this chapter are short discussions of the surveys that the Evaluation Institute implemented to measure behaviors within the education system and perceptions of the system.

Pre-Reform Testing in Qatar

Prior to the reform, testing in grades 1–12 in Qatar consisted of school-specific mid-year and end-of-year tests administered at the preparatory and secondary grades, and a national exam administered in the middle and at the end of grade 12. In this system, which is still in effect for Ministry and private Arabic schools, results from the two grade 12 tests are added together, and students receive a percent-correct score. This score, recorded on the graduation certificate, determines a student's eligibility to apply to a university in the region and to receive government scholarships to study abroad. Students who fail are given another test over the summer. The two grade 12 tests, jointly known as the national exit examination, assess student knowledge in the subjects associated with the track the student followed in secondary school (humanities, science, or humanities and science).

The national exit examination has several limitations. The tests do not facilitate systematic comparisons of schools' performance, do not permit assessment of students' growth over time or comparisons of Qatari students' skills with the skills of students in other nations, and do not provide diagnostic feedback to teachers. Additionally, the tests emphasize factual knowledge rather than the critical thinking, problem solving, and other more cognitively demanding skills promoted by the reform.

Qatar Student Assessment System Development Process: Initial Design Decisions

The reform's design recognized the many limitations of the existing testing program. The Evaluation Institute was charged with the responsibility for spearheading the development of a wide-ranging assessment

system in Qatar that would allow parents to gauge the performance of different schools and would allow policymakers to monitor school quality. This assessment system, which became known as the Qatar Student Assessment System (QSAS), was designed to serve three broad purposes:

1. Provide information to the public about school performance in order to motivate school improvements and promote informed parental school choice.
2. Provide feedback to teachers, thus helping them tailor instruction to support the needs of their students.
3. Provide policymakers with a national picture of how well students perform relative to the curriculum standards.

The QSAS presents the first opportunity to assess students objectively on a variety of skills and competencies in a standardized and systematic manner. In its initial design, the QSAS consists of multiple components. A standardized end-of-year examination known as the Qatar Comprehensive Educational Assessment (QCEA) is administered yearly to students in grades 1–12. The Student Assessment Office is responsible for developing the QCEA. The School Evaluation Office has designed and implemented a process for evaluating schools and issuing "school report cards" using data from the Qatar National Education Data System (QNEDS), which includes QCEA data. There are plans to add other types of assessments and to have Qatari students participate in international testing programs as the QSAS evolves.[1]

The process of developing national tests for the different grade levels was an enormous task, and one that had never before been undertaken in Qatar. Test items had to be fair, valid, reliable, and closely linked to the curriculum standards to ensure that the assessments would accurately and objectively assess student learning of key content areas, as well as students' problem-solving and critical-thinking skills.

[1] In 2006, Qatar participated in the administration of two international studies, the Program for International Student Assessment (PISA) and the Progress in International Reading Literacy Study (PIRLS). In 2007, Qatar will participate in the Trends in International Mathematics and Science Study (TIMSS).

Moreover, assessment results had to be clearly communicated to various constituencies to enhance the system's transparency and to serve diverse needs. And they had to be capable of assessing student readiness for higher education and the workforce.

A number of design issues had to be decided early on. With support from RAND analysis, the Evaluation Institute determined that all students—that is, students in grades 1–12—would be included in the QSAS. First, the SEC placed a high priority on obtaining longitudinal information at the individual student level. Having data on all students in all grades in the early years of the reform would allow analysts to follow students' progress. In addition, the number of students in Qatar's public school system was relatively small. In order to provide school-level information by grade on school report cards and to use appropriate modeling techniques to gauge school-level improvements, the best option was to have data for all the students in a school. Finally, student-level test results would help teachers, students, and parents assess students' strengths and weaknesses.

A second issue had to do with how results from the QSAS would be used. The design specified that assessments would inform parents as they chose among schools. In keeping with the overall philosophy of the reform, parental choice is seen as a key tool for ensuring quality, because under-subscribed schools would be forced to improve or close. Assessments would also enable the Evaluation Institute to monitor school quality. However, because examinations by themselves are generally recognized as inadequate for capturing the full range of capabilities deemed important, the Evaluation Institute would advise Independent schools to refrain from using assessment results as the sole determinant of student promotion or to judge teacher performance.

A third issue concerned the language in which the assessment would be administered. The reform permits Independent schools to select their language of instruction, and some Generation I schools used English as the medium of instruction in some classes. It was decided that assessments would be administered solely in Arabic in the early years of the reform. Starting with the 2006 QCEA, the mathematics and science assessments would be made available to schools in either English or Arabic, depending on their language of instruction.

Finally, because the curriculum standards would not be available by the time the first tests were administered, a two-stage plan was adopted for developing the assessments: initial instruments and fully aligned instruments. The 2004 QCEA would be administered to students before any Independent schools opened and might be used in the future to help measure the reform's effects. This assessment could not be aligned with the content and performance standards because those standards would not be completed until January 2005. The 2004 QCEA would focus on core knowledge of the four subjects measured against general standards determined by the test companies. This QCEA thus would not be directly linkable to future QCEAs, which would be aligned with the reform's standards; but it would nonetheless represent a "snapshot" of student abilities and knowledge on the four subjects prior to the reform.

Starting in 2005, the QCEA would be aligned with the new standards (although the original expectation was that it would take two years to begin this process). The RAND team envisioned that beyond 2005, the QCEA would be supplemented by other forms of assessment that would also be aligned with the standards. These would assess additional skills embodied in the standards, such as oral communication. They might take the form of conventional paper-and-pencil tests, computer-adaptive tests, classroom diagnostic tests, performance assessments, or portfolios. The RAND team conducted background research on different options and worked with the Student Assessment Office to begin thinking about which might be included in 2005 and later years.

As initially envisioned, the QCEA was ultimately to be a computer-adaptive assessment in which items would be administered according to examinees' demonstrated abilities. Qatar, like most countries, currently lacks the infrastructure to support computer-adaptive testing on a nationwide basis, so the focus was on paper-and-pencil tests for the early years of the reform.

2004 QCEA: First Year of Standardized Testing

Development and Administration

The process of developing the first-stage QCEA began in June 2003 with the recruitment of test developers. The Evaluation Institute, with RAND, developed an RFP that was sent to a selected group of four highly qualified testing companies.

After the proposals were reviewed and meetings were held with Evaluation Institute staff in Doha, Educational Testing Service (ETS) was selected to develop the Arabic tests and the tests of English as a foreign language, and CTB was selected to develop the mathematics and science tests. Although the RFP only called for the first-stage (2004) tests, the test developers argued that they could adapt the first-stage assessments for the second stage starting immediately after the initial administration, allowing the aligned assessments to become available starting in 2005 instead of the originally expected 2006. As a result of these discussions, the Institute modified the terms of the procurement, and both ETS and CTB submitted revised bids in line with this new thinking.

NORC (National Opinion Research Center at the University of Chicago) was put under contract to supervise the printing and administration of the tests and to develop surveys of students, parents, teachers, and school administrators under the auspices of the School Evaluation Office. The surveys would collect a broad variety of information that could be used in the school report cards alongside the school's assessment results. From the beginning, efforts were made to coordinate the printing software, data delivery files, and administration procedures among the test companies, NORC, and the Evaluation Institute Offices.

The fact that the QCEA would be administered in Spring 2004 meant that development time was very short. To accommodate this timeline, ETS and CTB were asked to develop mostly multiple-choice questions. There were two constructed-response items in 2004: A single essay question was included for the three secondary grades for English, and the Arabic tests incorporated a single essay question for the three preparatory grades and a different essay question for the three second-

ary grades. It was understood that the multiple-choice format would expand to accommodate many more constructed-response questions when the 2005 QCEA was aligned with the standards.

With the Evaluation Institute's sanction, the testing companies adopted different approaches to their test development work. ETS constructed new items for Arabic and English using item-writing experts in the United States and Jordan. CTB adapted items from one of their existing large-scale programs, TerraNova. To ensure the cultural and linguistic appropriateness of the items, both organizations worked with education professionals from the Middle East, ETS in developing items and CTB in adapting items. Institute staff reviewed the items as well.

After the cultural sensitivity review, the items were checked for clarity, grade-level appropriateness, and technical quality. This was achieved via a usability test of the adapted TerraNova mathematics and science items, and a pilot test of the newly developed Arabic and English items. The usability and pilot tests were administered in October 2003, in grades 2–12.

A total of 45 schools took part in the pilot test,[2] with an average of 335 students per grade participating in each subject. One class period (45 minutes) was allotted for test taking, and a total of 24 observers attended at least one day of the testing. CTB held focus groups (21 in all) with selected students to understand students' impressions of the items. NORC, ETS, and CTB reported findings to the Evaluation Institute in December 2003 (e.g., procedures, absentee and missing data rates, item statistics) and recommended changes to the testing procedure and to some items. Any new or revised items were reviewed for cultural sensitivity.

For the official test administration, the 2004 QCEA mathematics and science tests included from 25 to 30 multiple-choice items depending on the grade level. The Arabic tests and the tests of English as a for-

[2] In general, each contractor was assigned three Ministry of Education schools of each gender at each grade level, with the students in each school taking two subjects on successive days. Two private Arabic schools (one preparatory and one secondary) were added for each contractor. The remaining five schools were boys' primary model schools.

eign language had from 16 to 32 multiple-choice items[3] and one essay at selected grades. Students in grades 7–12 wrote an essay in Arabic, and students in grades 10–12 wrote an essay in English. Testing time for the multiple-choice items was 45 minutes, and 30 minutes were allotted for the essay portions of the tests. Younger children had the items read aloud to them.

Because Qatar did not have a history of standardized testing, teachers and students were given practice tests one week prior to the operational administration. These served to familiarize students and teachers with the test-taking procedures and directions.

To standardize test administration, the Data Collection and Management Office of the Evaluation Institute recruited and trained proctors. Women and men proctored girls' and boys' schools, respectively. So that the students would be more at ease during the testing process, teachers were allowed to sit in the classroom while the tests were being administered. The Data Collection and Management Office also put in place appropriate test security procedures.

Over a four-week period in April and May 2004, proctors administered tests at all participating schools.[4] For each of the four subjects tested, 95 to 96 percent of the 88,900 students in government-funded schools sat for the test. For individual subjects in individual grades, the number of Ministry students tested ranged from 4,241 to 6,067, and the number of students in private Arabic schools ranged from 320 to 1,787.

Test Scoring and Reporting

In Summer 2004, multiple-choice responses were electronically recorded at the Data Collection and Management Office's on-site computer facility, and electronic records of students' responses were forwarded to the testing contractors for scoring. The Student Assessment

[3] To reduce the burden on the youngest children, the grade 1 English assessment contained 16 items and the grade 2 and 3 assessments each contained 24 items. Above grade 3, these tests included at least 30 items.

[4] The schools included all Ministry schools and private Arabic schools. Other private schools did not participate in the QCEA.

Office received percent-correct scores from the multiple-choice items from test developers in November 2004 and scale scores shortly thereafter. ETS trained a number of Arabic and English teachers to score the essay questions using a 7-point rubric scale (ranging from 0 to 6). The essay scores were not combined with the multiple-choice scores to make a composite; they remained separate.

The Evaluation Institute carefully considered how to best report results to the public. In making this decision, the Institute examined the overlap of the 2004 individual QCEA items with the curriculum standards in October 2004 and found that it was insufficient for justifying a valid comparison between the 2004 results and the subsequent standards-aligned QCEA tests in 2005 and later. The Institute thus decided that future QCEAs would link back not to the 2004 QCEA, but to the 2005 QCEA instead; and that what it wanted to do was position the 2005 rather than 2004 tests in the public's mind as the major start of the testing program. Only general results would be reported from the 2004 tests, using the percentage of items answered correctly rather than scale or performance scores. In March 2005, the Institute director reported these general 2004 results and posted them to the SEC website (http://www.education.gov.qa).

Surveys

As the tests were being developed, the Evaluation Institute, NORC, and RAND worked on a series of surveys and school observation instruments to complement the assessments. In Spring 2004, the Institute administered these surveys to many stakeholders in the K–12 education system—school administrators, principals, teachers, social workers, and students and their parents. These surveys represent the first systematic attempt to document key aspects of the education system in Qatar, including teaching practices, aspirations for student achievement, and opinions about schooling. Responses were received from 232 schools, more than 8,600 teachers, more than 68,000 students in grades 3–12, and nearly 40,000 parents.

In March 2005—less than three years from the official launch of the education reform—the SEC and the Evaluation Institute publicly reported the first results from the surveys and assessments.

2005 QCEA: Aligning Tests with Standards

The 2005 QCEA's development upgraded the test instruments in two major ways: the tests were now aligned with the new curriculum standards, and the 2005 tests introduced several new item formats and procedures. The following paragraphs discuss the development of the 2005 QCEA.

Alignment with Curriculum Standards

Several steps were taken to align the 2005 QCEA with the curriculum standards. During the item-writing phase, the Student Assessment Office convened meetings with CfBT, CTB, ETS, and the Curriculum Standards Office. CfBT also provided input and feedback on the items that ETS and CTB had been developing, noting which standards the items appeared to measure and whether those items partially or fully measured the related standard. As in the previous year, Arabic and English items were pilot-tested to ensure grade-level appropriateness and clarity and were subjected to a review for cultural appropriateness.

New Item Formats and Procedures

The QCEA underwent a series of changes. New formats were added to each subject to assess a variety of skills that were not assessed during the 2004 administration. The number of multiple-choice items was reduced such that half of the questions on the 2005 QCEA were short constructed-response items. In mathematics and science, CTB moved away from adapting items in the TerraNova item bank to develop new items specific to the curriculum standards. CTB also added items that assessed students' ability to use tools in mathematics, such as calculators and protractors. In addition, the 2005 QCEA included a pilot test of a skill called "mental mathematics" (described below). Because the science standards for grades 1–3 emphasized skills not easily assessed via paper-and-pencil measures, the 2005 QCEA did not assess science for students in these grades.

In Arabic and in English as a foreign language, constructed-response items requiring short written responses were added to the grade 4–12 tests, and a performance task requiring students to listen

and extract information was administered to students in all grades. Relative to the tests in the previous year, the 2005 measures put more emphasis on grammar in both languages, and the scoring rubrics for the essays were more rigorous. All of these developments for the 2005 QCEA items involved extensive collaboration with the curriculum standards developers.

The 2005 QCEA procedures were simplified in several ways. Most notably, teachers, not proctors, would be responsible for administering the 2005 QCEA, the goal being to lower costs and to reduce concerns about proctors' lack of oral proficiency in English or modern standard Arabic. It was also argued that a familiar teacher would make testing more comfortable for the younger children.

Key Development Issues

A major challenge for the 2005 QCEA test developers was having to design test items that aligned with the new standards while the standards were still being developed. The deadline for final versions of the standards was December 31, 2004, but the test developers had to finalize their test items in Fall 2004. In the case of the Arabic standards, much work was done on them after the 2005 QCEA test development. As a result, the 2005 QCEA was not fully aligned with the standards. In addition, the differentiated standards for grades 10–12 specified two sets of expectations—"foundation" and "advanced" (as described earlier). In the first years of QSAS, only the foundation level would be tested.

Compared with the pilot test of Arabic and English assessments in Fall 2003, the one in Fall 2004 was more complex because its assessments included a number of constructed-response questions that required students to write sentences, short paragraphs, and long paragraphs directly on an answer sheet alongside their answers to multiple-choice questions. ETS also piloted listening items in grades 2–12 that required enhanced training of test administrators and the development and recording of the audio CDs used to administer the items. The addition of a listening component made for logistical challenges, such as finding CD-playing equipment that was reliable, had good sound quality, and was easy to transport. ETS identified multiple actors to

voice the listening tests in response to the requirement that students be exposed to a variety of accents, including non-native English and Arabic speakers.

CTB's pilot testing of the mental mathematics test was conducted with grade 6 students within the main 2005 QCEA administration. The test required students to listen to mathematics items delivered orally, and to solve the problem in 5, 10, or 15 seconds (depending on the problem) without using paper and pencil or a calculator. Most items assess basic skills with fractions, operations, or measurements, but some involve problem-solving exercises. This test was also developed for administration with audio CD players.

The inclusion of the new testing formats markedly increased testing time relative to the previous year. For the 2005 QCEA, testing time ranged from approximately 45 to 100 minutes in grades 1–3, from 120 to 160 minutes in grades 4–9, and from 45 to 160 minutes in grades 10–12. The longer testing time meant that multiple class periods were needed for test administration, leaving less time to administer tests to students who had been absent on the testing days. As a result, students who missed more than one test were given only one make-up test (selected by test administrators to maximize the response rate in each subject and grade.)

One more component of the 2005 QCEA was a study to examine the effects of the language of assessment on student test scores. In addition to the standard assessment in Arabic for mathematics and science, an additional set of English-language items was administered to some grade 5 students in schools identified as having adopted English as the primary language of instruction for these two subjects. This experimental administration would generate information that could be used later to compare the effects of testing in English versus in Arabic for students learning mathematics and science in English. Even though many schools continue to teach these subjects in Arabic, the Independent schools are moving toward offering them in English, which means this comparison will at some point be important for understanding the effect of the language of testing.

Surveys

In Spring 2005, the Evaluation Institute repeated the surveys first conducted in 2004. Similarly large numbers responded to this second administration, generating the beginning of a valuable time series of data on important aspects of the Qatari education system. At the same time, the Institute began to revise the instruments for future administrations based on the early survey experience and the needs of the reform.

Summary

The development of the QSAS was an extensive undertaking and is still going on. The QCEA, fielded in Spring 2004, represented the first time that students in all grades in publicly funded schools in Qatar were tested in a systematic, standardized way. Some private schools were also included in the testing.

The desire to measure before the opening of the first generation of Independent schools required that assessments and curriculum standards be developed simultaneously, which in turn required that there be a second stage in which the assessments could be more fully aligned with the standards. Despite intense time pressure, the Student Assessment Office and the test companies managed the development of both stages effectively. As a result, the 2004 and 2005 QCEA administrations generated a tremendous amount of information that can be used as the baseline for judging educational progress in Qatar.

Assessment of student skills in Arabic, English, mathematics, and science provides one set of indicators for evaluating the extent to which students have acquired the skills they need to succeed in further education and to be productive members of Qatari society. About 85,000 students in the Ministry schools and private Arabic schools participated in the QCEA in 2004 and, again, in 2005.

The development of these tests represents a significant accomplishment for the reform. The Student Assessment Office, ETS, CTB, and RAND collaborated to produce the world's first independently developed standardized tests available in Arabic. Even more impressive

is the fact that these partners produced instruments for 12 grades and four subjects in less than one year and, with the help of CfBT and the Curriculum Standards Office, completely redeveloped most of these instruments so that they were aligned with the curriculum standards and used more-advanced assessment practices just one year later.

The Evaluation Institute, supported by NORC and RAND, also developed and administered a comprehensive set of surveys covering almost all participants in the education system. These surveys were repeated a year later and, with revisions, are to continue being used in the future. Qatar is thus developing a long-term perspective on how the education system behaves and performs and how it is perceived.

Qatar is leading the way for others. The tests and surveys are likely to have broader relevance as other Arab countries modernize their education systems. Other Arabic-speaking countries could benefit from Qatar's experience either by adapting the instruments or by undertaking a similar process to develop instruments for their own education systems.

CHAPTER NINE

Establishing the Independent Schools

The terms of the reform's design specified that the first generation of Independent schools would open in Fall 2004. This meant that in 2003 and early 2004, while the Education Institute was recruiting staff and getting itself established, it also had to accomplish numerous tasks critical to getting schools open on time. Four major tasks fell mainly to the Institute's Independent School Office and Finance Office:

1. Develop operational guidelines for schools and plans for their financing.
2. Develop a long-term implementation plan specifying numbers and types of schools to be opened in the first and subsequent generations.
3. Develop a process for selecting the first groups of school buildings and school operators.
4. Establish ways to support those school operators as they develop educational plans and school operations in the first year.

As with other aspects of the reform's implementation, the timeline was exceedingly short. According to experts at the Charter Schools Development Center (CSDC), the U.S. experience in building charter schools suggests that 18 months should be allowed for opening schools, measuring from the point at which operators are selected to the day the schools open. The timeline for the Qatar education reform allowed less than half this time: The first generation of Independent schools would open eight and one-half months after the group of operators was identified. Given that the Independent schools represented the most con-

crete, visible manifestation of the reform, both the SEC and RAND expected these schools to undergo heavy public scrutiny. The stakes were high and the pressure was enormous.

We review here the most important tasks that had to be accomplished to establish the Independent schools. These tasks ranged from making policy, such as designing a funding mechanism for the new schools, to the most basic physical operations, such as ensuring that the teachers' toilets worked on opening day. The main tasks were to

- Develop guidelines for the Independent schools, including policies and procedures, funding levels, and financing mechanisms.
- Devise long-term plans for the number and types of schools to be established.
- Recruit organizations to support the schools.
- Select schools and school operators.
- Support the application and planning process for school operators.
- Prepare school facilities.

Unlike other aspects of the reform's implementation, which proceeded in a mostly sequential fashion (e.g., the process for developing curriculum standards), the many related efforts to open the schools occurred simultaneously, since there was simply no time for an iterative cycle of planning and action. For the purposes of the narrative, however, the following discussion is organized not chronologically but by the main tasks listed above.

Developing Guidelines for the Independent Schools

The Independent school guidelines had a dual purpose: They would constitute the policies and procedures for operating an Independent school, and they would provide a structure for the application to open a school and for the school operator's required end-of-year annual reports. To maximize the potential for variety and innovation in the new schools, the guidelines were designed to give applicants a great

deal of latitude in devising their school's education plan. The few requirements that applied to all schools were meant to ensure that the data needed to make sound decisions about quality would be gathered. While each applicant was expected to determine educational objectives and goals, there were no requirements that students earn certain test scores or meet specified continuation rates. However, because it needed to be clear that poor performance would have consequences, and because performance would be judged against an applicant's plan, the guidelines urged applicants to specify measurable outcomes.

The development of operational guidelines and financial plans, like other tasks described here, was a joint effort of the Education Institute Offices and the RAND teams assembled to assist them. This work was carried out throughout Fall 2003, and the guidelines themselves were distributed to the operators in February 2004. Together, the Education Institute Offices and RAND constructed a prototype application and gathered examples from several different countries to help illustrate what the different sections of the plan should incorporate.

The contract application required applicants to specify several components of an overall operational and educational plan for their school. The operational plan had to include

- The governance structure, including management structure and a required trustee/advisory board
- A detailed academic and financial accountability plan, including how the school would collect and maintain data for evaluation purposes
- A self-evaluation plan that described actions and activities the school would follow to monitor performance and make modifications if needed
- A financial reporting system and plan that included a business plan, start-up budget, operational budget, statement of financial policies and procedures, fiscal management plan, enrollment projections and actual levels, tuition and other fees, and how any surplus would be managed and dispersed
- A contingency plan, in case of school closure

- A facilities plan, including location, building maintenance, educational equipment, business services, transportation arrangements, cafeteria or catering, and support services
- A personnel section specifying gender of teachers and administrators, qualifications and job titles of all school employees, length of staff contracts, compensation, incentives, and professional development
- A communications and external relations plan, including strategies to involve parents and the larger community in the life of the school.

The educational plan had to include

- A mission statement
- School grade levels, age range, and gender
- Admission standards and selection criteria
- Policies related to student behavior
- Organization of student learning and assessment
- Policies for grade retention and graduation
- An academic calendar
- Explanation of student support services.

Because the processes for selecting school sites and operators were separate, most of the first-generation operators had to begin writing an education plan before they learned anything about the facility in which their school would operate. Once facility assignments were made, the operators were able to incorporate facilities planning into their final application.

The contract for Independent school operators set forth four requirements. Schools must

1. Participate in the QSAS assessments.
2. Comply with all financial regulations.
3. Produce an annual report.
4. Cooperate with and participate in other Institute data collection activities.

The Independent School Operator Agreement (ISOA), which details the terms and conditions of the contract between the SEC and a school, was developed in coordination with Qatari lawyers under contract with the Education Institute to ensure that the contract was in accordance with Qatari laws and regulations.

At the same time, the Education Institute and RAND worked together to develop a finance handbook to inform school-operator candidates of procurement and accounting procedures and to help them develop their school budgets. The handbook specified funding mechanisms for the schools, including per-pupil operating rate (PPOR), start-up funding, and possible special grants. The philosophy behind the per-pupil allocations was that they should enable operators to offer high-quality education to students in Qatar. Therefore, the PPOR levels were based not on the amounts spent in the Ministry system but, instead, on information collected from private school operators in Qatar and cost data from other countries.

Each Independent school would receive government funds based on the number of eligible students multiplied by the PPOR, which increased in accordance with the general educational level (elementary to preparatory to secondary). This amount could be increased by special grants, which were awarded to address school needs ranging from special laboratory equipment to transportation. In exchange for this funding, Independent schools could not charge tuition to students eligible for government funding, and they could charge tuition to a certain number of non-eligible students as long as the tuition rate for those students was at least 50 percent of the PPOR.

There was considerable uncertainty about the level of PPOR needed to fund quality education. Even though the schools were organized as profit-making enterprises, there was concern that too high a PPOR would lead to excessive profits for school operators. Accordingly, the PPORs were set using the best judgment of the Education Institute, with the provision that they could be modified later and that the granting mechanism could supplement per-pupil funding if necessary to enhance school quality.

RAND also advised the Education Institute on a financial information system to support resource allocation and oversight in Genera-

tion I and beyond. RAND developed the technical requirements for the reporting system (e.g., data elements needed to comply with reporting standards), identified potential suppliers, and structured the content of an RFP, which was written by Education Institute staff. Until the new system became available, Generation I operators were permitted to adopt financial and management software of their choosing.

In developing guidelines for school operation and financing, a number of significant issues needed clarification, including employee status and benefits. In some cases, an issue would be quite complex and involve much debate, especially when it touched on policies outside the reform. For example, as discussed in Chapter Two, teachers in Qatar are civil servants employed by the Ministry of Education and are thus bound by the Ministry's rules and regulations. Would teachers who left the Ministry to work for the Independent schools lose their valuable civil service status? What if a teacher joined an Independent school and then later decided to return to the Ministry? When the K–12 reform directly or indirectly touched on policies and regulations in areas under the direct purview of other government institutions—such as the case with civil service status of employees—further complications and delays were introduced into the decisionmaking process.

Long-Term Planning for School Establishment

To help ensure the reform's success, a long-term perspective on establishing Independent schools was needed. How many schools could the reform support? The answer to this question depended on, among other factors, the demand for the Independent schools and the availability of school facilities. It was clear that the physical state of many Ministry schools was unsatisfactory and that modern facilities would be needed for the more ambitious curricular and teaching innovations that the reform hoped to support. In addition, Independent schools needed motivated teachers trained to be innovative and student centered. There were few such teachers available, so opening schools at a moderate pace would allow time for the professional development needed for teachers. In addition, not many new school buildings were available for

the reform. Nonetheless, the Qatari leadership wanted to open schools quickly, which meant that the project had to make trade-offs.

Beginning in Winter 2003–04, the Education Institute and RAND worked together to develop a five-year facilities plan that considered the availability, state of repair, and other factors of facilities capable of housing Independent schools. This plan, presented to the SEC in March 2004, was based on three main principles:

1. Open schools gradually, at a pace that allows the Education Institute to develop sustainable capacity to support and oversee the schools while at the same time allowing for the enrollment of a significant and growing percentage of students who are eligible for government funding.
2. Achieve a process that is sensitive to student progression so that students of either gender attending an Independent school at the primary or preparatory level can advance to the next level without having to return to a Ministry school.
3. Encourage innovative school designs.

The plan projected that the Education Institute would need to open a total of 133 Independent schools over five years. This number represented, in 2004, about half of the existing Ministry schools and likely more than half of the student capacity, since at least some Independent schools would be larger than Ministry schools. This figure was based on an analysis of current enrollment in Ministry schools, enrollment of eligible students in private schools, projected enrollment growth in all schools, projected transfers from other schools to Independent schools, class-size estimates, and teacher availability. To accommodate the implementation timetable, in each year the SEC would need to secure newer Ministry buildings in need of little renovation, construct a handful of new prototype schools, and, if necessary, lease space.

Attention then turned to the specific decisions needed to open the first generation of schools. Given that the Institute was still in its early stages and thus had limited capacity, it was decided that Generation I would include no more than 15 schools. The Education Institute and

RAND discussed the level and age groups to include in Generation I. The decision was made to focus on younger students (primary and preparatory) in order to maximize school-leaving achievement gains for the Independent schools, since students would have longer exposure to improved curricula and teaching. However, this decision had a trade-off, since starting with the younger students delayed assessment of the reform's postsecondary outcomes, such as university entrance.

Another topic of discussion was whether to maintain the level/age pattern in the Ministry schools—i.e., primary (grades 1–6, starting with age 6), preparatory (grades 7–9, starting with age 12), secondary (grades 10–12, starting with age 15)—or to encourage something different. Given the oversupply of qualified female teachers in Qatar and the need to recruit male teachers from abroad, it made sense for the new system to employ as many female teachers as possible. This, coupled with the fact that it is socially acceptable for female teachers to teach boys up to age 11, favored a K–4, rather than 1–6, primary level. By putting the upper limit for primary school at grade 4, boys who were retained in grade for one year could still finish in a boys' primary by age 11. Given the requirement that teaching staff be gender segregated, this would enable Generation I school operators to develop boys' primary schools with a female teaching staff and thereby take advantage of the oversupply of female teachers. But in the short term, revising the grade spans would displace many students and make transitions difficult between Ministry and Independent schools. Following much debate, the decision was made to adopt the Ministry-school grade spans for the Independent schools.

Given that it was impossible to build new schools in time for the opening of the Generation I Independent schools, a plan (discussed below) was developed to convert Ministry schools over the short term to Independent schools with as little disruption as possible to the system and students.

Recruiting School Support Organizations

Everyone involved agreed that the new schools would need ongoing, hands-on implementation support if they were to succeed in realizing the reform's ambitious vision of a world-class education system. In particular, it would be critical for the leaders and teachers in the new schools to have help in becoming autonomous professionals doing substantially more-demanding work than the Ministry of Education had required.

The Education Institute, with RAND's support, searched worldwide for organizations with experience in charter schools and education management that might be able to send school support teams to live in Doha and work with staff in Independent schools. Thirteen organizations were invited to respond to an RFQ, and five were interviewed in December 2003. The Education Institute initially signed contracts with four of these organizations, but one of them withdrew because of difficulty finding suitable on-site staff. The resulting three School Support Organizations (SSOs) were Multiserve (New Zealand), Mosaica (United States), and the CfBT.

An additional SSO came from an existing relationship. The Secondary School for Industrial Technology (SSIT) was founded as a Ministry of Education school in 1999 and, with the help of GTZ (Gesellschaft für Technische Zusammenarbeit, or German society for technical cooperation), built a respected curriculum focused on technology and applied sciences. As discussed in the next section, SSIT chose to become an Independent school. As part of this arrangement, the Education Institute contracted with GTZ to continue its work in an SSO capacity, making a total of four SSOs.

Each SSO had to commit significant staff on-site in Doha. The Education Institute assigned SSOs to school-operator applicants based on the applicants' needs and the SSOs' backgrounds. Over an 18-month period, the SSOs would support the operators in a number of ways, including drafting the education plan, hiring and training administrative and instructional staff, setting up financial systems, monitoring the renovation of facilities, and selecting textbooks and other instructional materials. As Chapter Seven discusses, the SSOs also played a

significant role in professional development for teachers, which was critical to the schools' success. SSOs participated in standards implementation support training and provided hands-on support and mentoring on myriad curriculum and teaching issues as the standards and assessments were introduced.

Selecting Generation I Schools and Operators

As discussed in Chapter Five, since the market for Independent schools was unknown, strategies for encouraging operators to open schools were needed. The design of the reform permitted schools to be established via different routes, thus providing the opportunity to recruit a variety of operators: The scientific complex and other Ministry schools could convert to Independent schools, existing private schools could convert, and entirely new schools could be established by existing or new Qatari institutions or organizations, private school operators, or foreign education-management companies. After the Education Institute decided to send a signal to parents that this was a Qatari reform, the decision was made not to allow private schools to convert in Generation I and not to permit foreigners to apply as school operators. As a result, private school facilities and any facilities that might be constructed by foreign operators were not available as Generation I school buildings. For Generation I, school buildings had to come from conversion of Ministry schools, including the existing scientific complexes.

The Education Institute, working with RAND, developed a set of criteria for selecting a pool of Generation 1 candidate schools from among the Ministry schools. The candidate pool had to include schools that reflected a range of student backgrounds. It also had to be located in Doha and adjacent municipalities where there were multiple schooling choices so that parents would have access to a nearby Ministry school if they did not want their child in a converted school. A concentration of schools in Doha, where most of the population lives, would also make it easier for the Institutes to work with the new schools on a regular basis. Twenty traditional Ministry schools were identified as candidates and visited in October 2003. Of these 20, the SEC selected

ten for conversion to Independent schools for the 2004–05 academic year.

At the same time, the Education Institute approached the Ministry's scientific complex schools about converting to Independent school status. As discussed in Chapter Two, these schools were already somewhat independent from the Ministry and enjoyed a high profile in the community. Their participation would add credibility to the reform at a crucial stage. In bringing these schools into the reform, however, some issues needed to be settled. With their high status, autonomy, and resources, the two complexes (one for boys and one for girls) had little motivation to become Independent schools. In fact, they might stand to lose cherished prerogatives and status. For example, their practice of "creaming," or admitting only the best students, was in direct opposition to the recommended open-admissions policy for Independent schools.

The Education Institute also engaged in discussions with SSIT, another non-traditional Ministry school, to convert to Independent school status and to make GTZ, its partner, an SSO in the new system.

The Education Institute succeeded in recruiting these three non-traditional Ministry schools and their operators—the two complexes, one for boys and one for girls, and SSIT—but it still needed to identify operators for the other Generation I schools. In October 2003, it placed an advertisement for school operators in local newspapers. The Education Institute hoped to attract individuals with experience managing educational institutions, as well as non-educators from the business sector who could be teamed with an experienced principal to oversee the school's day-to-day operations. The Institute received approximately 180 applications; 60 of the applicants were invited to attend orientation sessions in December 2003. The choice of these candidates was based on a mix of factors, including the innovativeness and thoughtfulness of their vision, prior experience, interest in education, success in their previous work, educational background (a four-year college degree was the minimum requirement), and desire to lead and manage an Independent school.

Training and Providing Support for the School Application Process

In January 2004, the Education Institute, with RAND support, selected 15 school-operator applicants (including the two scientific complexes and SSIT) for the next step, which consisted of training and the final application process. The training sessions were open to these applicants and to any staff they had hired by that point, such as principals and finance officers.

The Charter Schools Development Center (CSDC), a California-based organization, was hired to conduct the training workshops to help candidates understand the requirements of the application, as set out in the application guidelines. The SSOs also supported operators as they developed their plan and throughout the first year of their school's operation.

CSDC interviewed candidates who had attended the orientation session to learn about the candidates' strengths and weaknesses (and to tailor their workshops accordingly) and to make an initial assessment of the most-promising candidates. It conducted weeklong workshops, held over four to five continuous evenings, in January, February, and March. The Institutes and RAND also played a role in some workshops, which covered the following topics:

- January: How to develop a school work plan, mission, and vision; designing an educational program; assessment, alignment, and student data; setting policies for students and parents; external relations
- February: Financial planning and management; school governance; personnel and staffing
- March: Accountability and effective implementation planning.

Some aspects of the training process were difficult because the Institutes were still working out many of the reform's details. Trainers could not, for example, definitively state how to form legal entities, whether such entities could have non-profit status, and whether and, if so, how individuals (operator candidates, principals, teachers) pres-

ently employed by the Ministry of Education would retain their civil service status.[1] Trainers and applicants also lacked information about the status of school facilities until very late in the process.

In April 2004, the 15 operator candidates submitted their school applications to the Education Institute. Two were rejected at this point, and the Institute recommended that the SEC contract with the 13 remaining applicants. Of these 13, the SEC approved 12. Table 9.1 shows the characteristics of these 12 schools, including the grades they served. Note that some of the elementary schools included not only kindergarten but also pre-kindergarten (pre-K), which serves students younger than those of kindergarten age.

The Education Institute signed an ISOA with these 12 schools, all of which had been Ministry schools. The ISOA set forth reciprocal rights and responsibilities and authorized release of government funds to the school. It also incorporated by reference the school's application,

Table 9.1
Generation I Independent Schools

Independent School	Grades Served	Enrollment	Student Gender	Language of Instruction
Al Khaleej	1–5	597	Male	Arabic
Jawaan Bin Jassim	1–4	509	Male	English
Moza Bint Mohammed	Pre-K–4	509	Female	Arabic and English
Al Yarmouk	7–9	611	Male	Arabic
SSIT	10–12	245	Male	Arabic and English
Ali Bin Abdullah	1–4	560	Male	Arabic and English
Khalifa	Pre-K–6	653	Female	Arabic and English
Al Israa	1–6	644	Female	Arabic and English
Al Rafaa	Pre-K–6	899	Female	Arabic and English
Khaled Bin Ahmed Al Thani	7–9	592	Male	Arabic
Al Bayan Educational Complex	K–12	1,788	Female	Arabic and English
Omar Bin Al Khattab Educational Complex	Pre-K–12	1,528	Male	Arabic and English

[1] It was later determined that Ministry staff could be seconded to the Independent schools, thereby retaining their civil service status and their ability to return to the Ministry at a later time. But the time frame for this policy was limited.

lease, and policies, thereby making the obligations and commitments contained therein legally binding.

Preparing School Facilities for Opening Day

From the time the contracts were signed until the first-generation schools opened in September 2004, the operators continued to refine and implement their operational and educational plans and oversaw plans for physical improvements to their schools' facilities. The Education Institute had promised the operators that all "reasonable" facilities modifications needed to implement the schools' educational plans would be made. The operators had had no constraints placed on their initial requests, so their expectations were very high. Some requests were for new wings to existing buildings, Olympic-size swimming pools, large libraries, and on-site medical clinics, to name a few.

These high expectations soon clashed with reality. Schools being converted were not available for renovation until the end of the school year in June 2004, which left only two to three months to complete any work before the new school year began. The short time frame meant that getting even the basics completed on time was a stretch; most initial requests for renovation were scaled back significantly.

In June, the Education Institute issued tenders for facilities modifications, most of which focused on basic upgrades to older buildings plus the addition of computer laboratories, libraries, and sun protection over open spaces. Many major construction projects were under way in Doha at the time, which made it difficult to attract contractors for these jobs because of the short time frame and small scope of work. The construction firms that did respond indicated that even the reduced specifications in the tenders were still too ambitious given the opening-day deadline in September 2004. As a result, the scope of work was scaled back even further.

In the end, most of the construction undertaken was completed on time and resulted in substantially upgraded learning environments for teachers and students.

The Promise of the New Independent Schools

Although there were a number of challenges along the way, the nine Independent schools that had to undergo conversion opened on schedule. (The two scientific complexes and SSIT changed status only and thus needed little in the way of conversion.) Even as they opened, these schools already differed from Ministry schools in significant ways. For example, Independent schools were required to schedule 180 instructional days per year. The new schools were also required to limit the number of students per classroom to 25, far fewer than the 35 to 40 students enrolled in most Ministry classrooms.

Other characteristics reflected operators' visions of a good education. In some schools, for example, full-time librarians welcomed students into library spaces that included many online resources and user-friendly applications. The promise of a new pedagogy could be found in desks arranged in groups of four—a configuration not seen in Ministry classrooms. Some classrooms integrated computers into the learning environment, again something not seen in Ministry schools.

Teachers in the new schools were beginning to use the curriculum standards to guide instruction. At this point, it was too early to know the true magnitude of change in the Independent schools, but there were hopeful early signs that students would be exposed to a world-class curriculum and pedagogy.

Summary

In Fall 2003, the Education Institute set about developing guidelines and policies for the Independent schools, selecting schools and operators, and supervising renovations to prepare for the opening of the first generation of Independent schools in Fall 2004.

In just eight and a half months, the Education Institute and school operators, working with the SSOs, CSDC, RAND, and others, were able to open nine new schools plus the two converted complexes and the converted SSIT, making a total of 12 Independent schools. This time period is less than half of what American charter school

experts recommend. These schools were very popular with parents, and most had waiting lists of students who wanted to attend.[2] This strong demand for places in the new schools caused most of the operators to ask the Education Institute for permission (which they received) to increase their student capacity.

The SSOs played a crucial role in helping operators develop their education plans, hire and train teachers, procure materials, and enroll students. Even at their opening in Fall 2004, the new schools showed promise of change to come. Compared with the overcrowded Ministry classrooms, the new classrooms had fewer students and were organized in more flexible ways. Teachers were using new curriculum standards and revising learning to suit those standards.

In just two years from the Qatari leadership's decision to begin the education reform, 5,500 students were enrolled in the nine new Independent schools. The total in all 12 schools—the nine new ones plus the converted Ministry complexes and SSIT—was over 9,000 students, all of whom were beginning to benefit from standards-based education.

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[2] Given that there was little tangible information about these schools, high demand for them must be viewed primarily as an indicator of dissatisfaction with Ministry schools, although the principles of the reform clearly appealed to some parents. Parents with a child at a Ministry school that was converted to an Independent school were required to "opt in" to ensure a place. Some parents failed to do so and found that their child was not enrolled. These students were placed on a waiting list and had to enroll elsewhere unless a space opened.

CHAPTER TEN

Challenges of a Rapid and Comprehensive Reform

Every major implementation project runs into challenges along the way, and Qatar's education reform has proved to be no exception. In Chapter Five, we discussed potential challenges in implementing the reform in Qatar, as well as how the design of the reform and the implementation strategy attempted to deal with them. These challenges included

- Maintaining a system-wide perspective
- Building human resource capacity
- Engaging stakeholders through communication
- Encouraging operators to open schools
- Managing a very tight time frame.

In addition, as expected, some unanticipated challenges emerged:

- Conflicting leadership roles
- Collaborating across culture, distance, and time.

This chapter summarizes these key challenges, which were a significant part of the implementation experience.

To understand these challenges fully, it is important to consider the context of the reform, which was an extremely ambitious undertaking with a broad sweep. It called for new institutions and major development programs (e.g., curriculum standards, assessments) within an existing education establishment, and indeed a nation as a whole, in which many of the reform's principles were novel. The reform's suc-

cessful implementation would require not only that new institutions and programs be developed, but that the behavior of people working at many levels change as well. Moreover, the short timeframe magnified the challenges and generated additional pressures.

Maintaining a System-wide Perspective

The reform required the participants to build several institutions and many programs simultaneously, and each institution and program called for focused attention. At the same time, it was essential to keep the "big picture" in everyone's sight. The reform's design recognized this challenge, calling for the SEC and the Implementation Team to be responsible for these larger considerations. The SEC (at an overall level) and the Implementation Team (at a working level) coordinated tasks, monitored progress, and identified the need for mid-course corrections. RAND reinforced the reform's design and principles by participating in the Implementation Team, by formally orienting the reform's leaders, and by working closely with the SEC and Institute staffs.

As discussed in Chapter Six, RAND organized orientation sessions for the SEC members and Institute leaders early in the implementation. RAND staff also worked closely with many of the Offices in the two Institutes. When the number of participants was small, these mechanisms served to reinforce the principles and design and also allowed for needed discussion of the implementation. But as the implementation proceeded, the Institutes grew, new contractors arrived, and the number of participants increased rapidly. With this growth, it became more difficult to ensure that everyone involved had a firm understanding of the reform's underlying principles.

The Implementation Team served an important early coordination function. But with the reform's rapid pace and large size, it was difficult and time-consuming to handle the many required aspects of coordination. The members of the Implementation Team and SEC were serving in part-time capacities, as a second or third job after their primary employment. After six months, the Implementation Team meeting process had become too cumbersome and time-consuming

for the members, so the SEC agreed to dissolve the team in April 2003. As an alternative, the SEC expected the Institute directors to work with the contractors and bring major issues to the SEC. Although the Implementation Team was burdensome for its members, its dissolution resulted in the loss of an important and useful mechanism for keeping the many reform programs aligned with the original vision.

Building Human Resource Capacity

The literature on education implementation points to lack of capacity as a major barrier to success. The capacity issue is perhaps more extreme than usual in Qatar, because most education professionals have experience only in the Ministry system, which operates under principles very different from those of the proposed reform. We expected that some local educators would join the reform effort, filling roles as Institute staff, teachers, principals, and school operators. For these educators to make the transition from the Ministry system, they would have to be encouraged to leave the Ministry, oriented to the reform's principles, and given continuous support aimed at promoting new ways of working.

In addition, specialized expertise not available in Qatar would be needed to implement some of the components of the reform. For example, to our knowledge there was no one in Qatar with experience administering a large-scale standardized testing program. In addition, local experience with curriculum standards or school evaluation was very limited; and at the school level, Ministry principals had not been trained in such business operations as human resources and financial management—skills needed in the Independent schools. As noted earlier, teachers needed substantial support to teach according to the new curriculum standards.

The design and the implementation strategy attempted to respond to these limitations in several ways. The SEC and Institutes were designed to be small and with few levels of hierarchy, the goal being to reduce the chance of establishing another highly bureaucratic ministry. The recruitment process and orientations stressed finding and equip-

ping the Institute and Office leaders to operate the reform. Teachers and school personnel received professional development to enable them to work according to the reform's principles. Contractors were required to adopt human resource strategies for developing Qatari capacity to manage and operate programs.

Each of these strategies was put into effect in the implementation. In each case, there were important successes; but there were also aspects of the strategies that proved inadequate.

In terms of recruiting, both RAND and the Implementation Team searched within Qatar and internationally to fill positions. The searches were based on criteria developed for each position, but there were also important common elements. In all cases, experienced managers who were comfortable working in unstructured organizations and teams and who could communicate well with peers, subordinates, and superiors were sought. Some positions especially required leaders who could communicate in English because there would be a need to work with an international team. Other positions called for fluency in Arabic and the ability to communicate with the Qatari public. Some positions needed both languages.

Expatriate recruiting was more challenging than anticipated, for two reasons. First, professionals who are established in their careers in their home countries may be reluctant to move abroad for an assignment lasting three to five years, which is typical for expatriate staffing in projects such as this one. Second, the tension in and negative publicity about the region because of the 2003 Iraq War early in the project made it even more difficult to recruit on the international market.

RAND and the Implementation Team were fortunate to be able to recruit qualified managers for most of the leadership positions. But because not all positions could be filled, some directors had to take on extra duties.

A number of RAND staff, including one senior manager, relocated from U.S. offices to Doha, but more staff were needed, especially those that had specialized expertise in education implementation. A number of such senior staff from outside RAND were hired to be resident in Doha. Other senior staff from RAND's U.S. offices traveled to Qatar as frequently as possible on a rotating schedule. Nonetheless, Phase

I implementation would certainly have benefited from more resident, experienced RAND staff. RAND staffing limitations meant that fewer individuals knowledgeable about the reform principles were available to help orient local staff (whose numbers were always expanding).

The design called for the Education Institute's Professional Development Office to come up with a strategy for providing professional development for school personnel. QU had recently abolished its teacher training program and was in the process of establishing a new graduate program. But the Education Institute did not develop a comprehensive strategy at this time. Professional development was tackled in a number of different ways, not always successfully. As Chapter Eight mentions, the early attempt to train teachers through the Education Institute's TPCP met with mixed results, partially stemming from insufficient lead time. The professional development offered by the SSOs and other outside contracts, such as the standards implementation support, was successful but nonetheless challenging in many cases.

Engaging Stakeholders Through Communication

It was anticipated that communication with the public and with the education system's participants would be important to the reform's success. Early in the implementation, the SEC hired a Communications Coordinator and engaged a communications strategy contractor, Lipman Hearne, to develop a strategy and plan for communications.

In March 2004, the Communications Office launched a bilingual website containing news stories and regular updates on the reform's progress and activities (SEC website: http://www.education.gov.qa). The website provides reform information geared to the needs and interests of parents, students, teachers, principals, and the media, as well as applications and other information for those interested in starting schools or providing services to them. Additionally, the Communications Office and the Evaluation Institute sent several letters to every parent describing the Institute's plans for tests and surveys and emphasizing responses to common questions from parents. This approach, combining direct engagement and responsiveness, contrasts

with the silent, bureaucratic procedures usually followed in government in Qatar and elsewhere.

The Communications Office also developed regular publications, such as an annual report on the reform and its accomplishments (SEC, 2005b, 2006b). In addition, it is responsible for issuing press releases on key developments and organizing public and media events. The first national event was held in March 2004 to launch Qatar's *Education for a New Era* reform to the public. This event also served to inaugurate an annual forum for presenting the reform's goals and progress to the interested public and allowing that public to question the reform's leaders.

But these activities have been hampered by too few spokespersons for the reform, especially in the beginning. It was anticipated that the SEC members and Institute directors would speak often in public to develop support for the reform and communicate its principles and programs. At first, few leaders took on this duty. The reform's leaders were absorbed in many programmatic tasks, making it difficult for them to find time for public communication. In addition, the SEC members were very much part-time and had significant primary responsibilities in other sectors of Qatari society. Because of this shortage of spokespeople and the Communications Office's limited staffing, few communication events took place in the reform's early stages.

Over time, the reform's leaders put more emphasis on public communication, appearing in public, attending events, and speaking in the media. The Communications Office also added new communication products containing information about the reform's progress. These products also help in establishing support for the reform by offering evidence that the reform is needed to improve student learning.

Public engagement is needed because the reform is so challenging to Qatari education traditions. For example, teachers should experience more autonomy but less security in the Independent schools compared with the Ministry schools. These differences might make many Ministry teachers anxious about the reform's effect on their career. As another example, parents may be both excited and nervous about the Independent schools because the way in which these schools educate differs from that of the Ministry schools. Engaging these groups rep-

resents a strategy for providing them with information, hearing their concerns, and involving them in the reform process. Concern among the public might be ongoing, so an increase in public communication will likely serve the reform well now and in the future.

Encouraging Operators to Open Schools

The market for establishing independent schools was unknown when the reform was designed, so the implementation plan incorporated strategies aimed at encouraging operators and schools to seek Independent school status. The plan allowed for established Ministry schools (including the scientific complex schools and SSIT) and existing private schools to convert to Independent schools. The implementation strategy provided for recruitment and training of operators, as well as technical assistance to them in writing their Independent school plans. The strategy also furnished school facilities and start-up funds to new operators.

As Chapter Nine discusses, the initial advertisement for school operators resulted in 180 applicants, 60 of which were invited to orientation sessions. This response suggested that interest in the idea of operating independent schools was significant. The challenge came not in recruiting sufficient numbers of school operators, but in ensuring that those selected had the skills, persistence, and plans to succeed. Even though the process used to choose the 12 first-generation Independent schools was extensive, many operators still needed substantial support from the Education Institute and SSOs to complete their plans and open their schools on time.

The Education Institute faced a constant challenge in trying to encourage and support operators, most of which had no prior experience in operating a school. To lower the barriers to starting a school, the Institute took responsibility for locating school buildings and bringing them up to modern standards for learning. It also provided some start-up funds to defray operators' expenses prior to opening a school. Each operator was matched with an SSO, at no cost to the operator, to provide ongoing hands-on support and professional development.

As a result of these provisions, operators did not have to invest capital to start a school. The Institute also promised generous funding and allowed operators substantial control over how funds were spent. The combination of funding, facilities, support, and autonomy encouraged operators to come forward and develop education plans.

To make staffing easier, the Institute negotiated arrangements with the Ministry to allow Ministry teachers to join the new schools without immediately giving up their civil service protections. These arrangements lessened teachers' uncertainty about joining the new system.

The success of the reform lies in whether it expands access to high-quality schooling in Qatar. As described here, the SEC adopted many policies early on to encourage operators to apply and to support those operators in realizing a vision of high-quality schooling. These early policy decisions allowed the reform to get off to a quick and sound start.

Conflicting Leadership Roles

One challenge that was not anticipated had to do with the roles and responsibilities of the many partners who came together to build the reform. The reform blueprint assumed that Institute leadership would rely heavily on outside experts at RAND and other contractors to make key decisions in the early stages of the reform. The Implementation Team would serve as a forum for resolving differences and overseeing decisions. Then, as capacity among the Institutes grew and developed, and as the principles of the reform became established in policy and everyday thinking, responsibility for decisionmaking would shift, over time, to the Institutes. There was, however, neither a specified timeline for this transition, nor any specific indicators to mark when the Institutes might be ready to assume responsibility on their own.

This ambiguity generated some confusion in day-to-day implementation, especially during the months after the Implementation Team was dissolved. Because the Qatari leadership held both the Institute directors and RAND responsible for the implementation's success,

it was not clear who should make the final decision in many circumstances. Understandably, these vague and overlapping responsibilities made for conflicts and inefficiencies. RAND's dual role of assisting in the implementation itself while monitoring its quality added to the complexity.

Collaborating Across Culture, Distance, and Time

Finally, the full extent of complications in implementing a reform requiring hundreds of individuals to collaborate across cultures, distance, and time were not anticipated at the outset of the project. RAND and the other contractors had resident staff in Doha but also relied on experts at their home offices or other locations outside Qatar. Many of the tasks called for collaboration and thus for meetings coordinated across many time zones. Participants also had to deal with the fact that the weekend rest days in the Gulf differed from those in Europe and the United States. As a result, there were often only a few times per week when teams could meet by phone, and these times required someone to either get up early in the morning or work late in the evening, or both.

Other logistical challenges limited the flexibility of working relationships. For example, extremely limited hotel space in Doha meant that accommodation needs had to be anticipated and booked up to months in advance. With the rapid pace of the reform, it was difficult to schedule in-person meetings in Doha, especially when more than one or two foreigners were needed. The Institutes, RAND, and the other contractors often discussed major meetings up to six months in advance so that busy schedules and hotel accommodations could be arranged. While this advance planning was beneficial, the nature of the work called for interactions to be more frequent than could sometimes be managed.

Time, distance, and culture also reduced the ability to manage the overlapping responsibilities among the Institutes, RAND, and the other contractors. We think that decisions and responsibilities would have been better coordinated if it had been possible to arrange more

face-to-face interactions than actually occurred. Since many of the participants could not speak Arabic, communication was often via people's second language, making in-person meetings especially important for good communication and joint decisionmaking.

Managing a Very Tight Time Frame

The reform was implemented on a very fast timetable and established a number of new institutions and programs in its first few years. To meet the schedule that was set, these institutions and programs had to be developed quickly and simultaneously, making project management a challenge and constraining everyone's flexibility for meeting other challenges. People who were hired to accomplish pressing tasks had little time to internalize the reform's vision and principles. Key spokespeople for the reform could not always be available for public communication because they were needed urgently for programmatic tasks or for commitments outside the reform. The collaboration needed among people drawn from many backgrounds and cultures often depended on just one or two face-to-face meetings. Now that the reform and its programs are established, time should be devoted to addressing the challenges that were difficult to meet during the reform's rapid development.

Summary

As expected in a reform so broad in scope and proceeding at such a rapid pace, challenges were encountered during implementation. It was anticipated in advance that maintaining a system-wide perspective and recruiting and building the human resources necessary for the reform would be challenging, as would communicating with the public and supporting new operators as they prepared to open their Independent schools. But in addition to these expected challenges, there were unexpected challenges: coordination of leadership and collaboration across cultures, distance, and time. The fast pace of the reform magnified

all of the challenges. Recommendations for continuing to respond to these challenges as the reform progresses are discussed next, in Chapter Eleven.

CHAPTER ELEVEN

Accomplishments, Recommendations, and Implications

The *Education for a New Era* reform represents a significant departure from Qatar's past and a far-reaching vision for Qatar's future. A ten-year time frame was set for the reform's implementation; the focus in this report is the three years from the project's inception, in Summer 2001, to the opening of the first generation of Independent schools, in Fall 2004. This report documents the rationale and strategy for the system-changing education reform begun in Qatar and the reform's initial implementation.

The specific purpose of this chapter is to review the main accomplishments documented in earlier chapters and present developments since Fall 2004. In addition, this chapter makes recommendations for the continuing education reform effort and concludes with some of the implications of this project that go beyond Qatar. RAND's education work in Qatar continues, and we expect to prepare more reports and articles to document the reform's further progress and effects.

Although early indicators are promising, it is too early to determine the success of the reform's three-pronged approach: (1) form new structures to realign power and authority in the system; (2) institute the basic elements of aligned standards, assessments, professional development, and monitoring; and (3) establish the principles of autonomy, accountability, variety, and choice through the Independent schools. Further, because the reform's implementation is still unfolding, we can only assess accomplishments achieved thus far and document the most-pressing challenges that remain.

Accomplishments

Three types of process outcomes are important to our assessment of what the reform has achieved so far. The first of these is the extent to which structural changes have occurred because of the reform model. The second is the extent to which the emerging system improves basic educational elements, including curriculum, assessment, and professional development. The third is the extent to which the reform's principles—in this case, autonomy, accountability, variety, and choice—are embedded in the structure and behavior of the system.

We first discuss what has been achieved in making changes to the existing structure in accordance with the reform model (first process outcome). We then turn to the achievements made in improving the basic educational elements (second process outcome) and in embedding the reform's principles within the system (third process outcome).

Progress in Structural Change

The project in Qatar is a system-changing education reform. Such a reform should (McDonnell and Grub, 1991)

1. Produce a new set of institutions to expand the range of those that can provide educational services.
2. Change the existing division of tasks among educational institutions.
3. Alter the patterns of authority and responsibility among institutions.
4. Motivate established institutions to improve their performance.

The following subsections discuss the project's achievements according to these four characteristics of a system-changing reform.

New Institutions Have Been Established. The design of the reform called for two types of new organizations to be established: a set of Independent schools and a new administrative structure to oversee them. The SEC and the Education and Evaluation Institutes form the second of these, the administrative structure. The SEC and the Institutes are now fully operational, employing approximately 200 staff and

overseeing many contracted staff. The first generation of Independent schools, 12 total and with over 9,000 students enrolled, opened in September 2004 under three-year renewable contracts. Early worries about attracting enough school operators to establish Independent schools proved unfounded.

The Division of Tasks Has Changed. Several important educational tasks are performed in new organizations now. For example, the task of educating students is divided among the schools that already existed and the reform's new schools. In addition, the Education Institute, rather than the Ministry of Education, determines the standards for curriculum in four subjects for all schools under government auspices (since the Ministry also will follow the curriculum standards).

The Patterns of Authority Have Been Altered. In several important ways, patterns of authority in the system have changed. First of all, the SEC now has legal authority over the new Education and Evaluation Institutes and the existing Ministry of Education. Ministry schools are now required to participate in national student testing and other data collection efforts carried out by the Evaluation Institute.

The Institutes are autonomous from the Ministry and other government organizations. The SEC relates to the Institutes primarily as a policy-setting and decision-review body. The Institute directors make decisions about policy, strategy, personnel, and allocation of resources. The SEC governs the Independent schools using a contractual arrangement in which the expectations and responsibilities of both parties are set forth in writing. In contrast, the Ministry remains a top-down organization that exerts strict control over its schools through mandates and rules.

Established Institutions Have Incentives to Improve. While much of the focus has been on the new institutions, the Ministry and its schools can benefit from many of the reform programs, such as the curriculum standards and student assessments. Ministry teachers and supervisors have become involved in reform efforts. For example, Ministry teachers and supervisors in the curriculum working groups and TPCP have had direct contact with the reform and its principles and, according to anecdotal reports, have altered their practices as a result of these experiences.

The SEC has ordered the Ministry to adopt the new curriculum standards, so Ministry students may benefit from the standards if they are used to guide instruction in Ministry schools. It is also possible that simple competition with the Independent schools will motivate change in the Ministry schools.

It is still too soon to tell whether the Ministry leadership will be motivated to change in ways that complement the reform agenda. The ongoing RAND study is examining both Independent and Ministry schools and thus can provide a view of changes occurring in both types of schools.

Progress in Improving Basic Educational Elements

As discussed above, the second and third process outcomes of importance are those used to assess progress in, respectively, improving basic educational elements and embedding the four principles of the reform—autonomy, accountability, variety, and choice—within the system. To review the achievements in these two areas, we recap the reform's major accomplishments (described more fully in previous chapters) and provide updates on more-recent developments. The SEC website (http://www.education.gov.qa) is the official source of additional and current information.

Education Standards and Assessments Have Been Established. The Qataris now use a set of internationally benchmarked curriculum standards (and supporting materials) in Arabic, English, mathematics, and science. The standards and associated methods for teaching Arabic represent an especially important shift in practice toward teaching practical language skills using a wide variety of texts, encouraging more critical thinking and the use of communication skills demanded by employers.

The new standardized assessments provide a mechanism for both monitoring and raising quality. Qatar and many other Arab countries have nationally standardized tests for students exiting primary and/or secondary school. But these end-of-cycle examinations cannot provide much feedback for helping students to learn or teachers to improve their teaching. Furthermore, because students are not given standard-

ized tests in the same subjects over time, it is impossible to calculate useful value-added scores.

The new Qatari assessments are the first of their kind in the Arab world. With the 2005 QCEA aligned with the standards, teachers in the Independent schools will be further motivated to integrate the standards into their classroom practices. Schools will also be using the information about student and school performance to monitor and adjust their practices. It is anticipated that once there are enough schools to support nation-wide choice, parents will use test-score results in choosing schools for their children. In the meantime, because students and teachers are accustomed to taking examinations very seriously, examinations are likely to serve as an incentive to integrate the standards and improve outcomes in all schools. The QSAS also supports student participation in such international student assessments as the PISA, PIRLS, and TIMSS, which will enable policymakers and the public to compare Qatari student performance to that of students in the education systems of other nations.

The 2005 QCEA tests were the first to set objective performance standards, and Qataris set those standards very high. Not surprisingly, almost no students in the Ministry schools scored as proficient in any subject on these tests. Specifically, the average proficiency scores in Ministry schools were as follows:

- Arabic: 3 percent
- English: 1 percent
- Mathematics: 0 percent
- Science: 0 percent.[1]

These results show that the Ministry schools have a long way to go to reach the expectations of the SEC. The Independent schools, especially the converted scientific complex schools (which had been operating for almost five years at that point), fared somewhat better on the tests, although all schools have room for significant improvement

[1] Authors' calculations of grade 4–11 average from data in SEC, 2006a.

in the future. Further analyses are needed to determine the significance of the score differences and to track changes over time.

Through annual Evaluation Institute surveys, parents have expressed very strong expectations for their children. For example, 95 percent of parents said they expect their child to attend college (SEC, 2005a). To meet this goal, the K–12 system will have to provide significantly better preparation. In the initial survey year, parents indicated that they were satisfied with the schools: Eighty-three percent said their child's school provided a good education (SEC, 2005a). Experience in other countries suggests that this high level of parental satisfaction with their children's school is a normal phenomenon. However, as the testing data are released to the public over time and parents internalize the message that the schools have a long way to go, there might be some marked shifts in satisfaction and greater variation in satisfaction from school to school. These would be one indicator that parents are using the testing data to raise their expectations about education quality.

An Education Data and Information System Has Been Developed. The Qatar National Education Data System (QNEDS) is fully functional, and the Evaluation Institute is collecting and analyzing data about education in Qatar. Annual surveys have been administered since April 2004 to students, parents, teachers, social workers, and school principals to collect demographic and descriptive information and to elicit the views of these people on different issues. Additionally, Evaluation Institute surveyors collect information on the schools' operations to capture descriptive data about students, staff, curricular offerings, resources, and policies.

The establishment of QNEDS and its uses in Qatar represent a major advance. The system is comprehensive and detailed and will allow Qatar to both track progress toward its goals and report its accomplishments and challenges to the public in a clear manner.

Professional Development for Teachers Is Increasing. To promote teaching that accords with the curriculum standards, teachers need professional development, both before and during their service. The reform has made major progress in both of these areas. For preservice development, Texas A&M is collaborating with QU to offer a post-graduate teacher training program oriented toward teaching in

accordance with the new standards. For in-service development, SSOs and other organizations work closely with teachers in each Independent school during its first year of operation. In addition, the Education Institute has established a teachers' network on the Internet to enable teachers to communicate with each other about teaching practices and to share curriculum materials and resources.

Public Engagement on Choice and Accountability Is Increasing. Public information sharing is on the rise. The reform operates in a spirit of transparency, sharing information with the education community and the broader public. Through its Communications Office, the SEC maintains a bilingual website and regular publications. Through its annual March event, the SEC provides a forum in which those interested can join together to discuss the reform's progress and question its leaders openly. This is in stark contrast to the past Qatari government organizations, which offered the public little access to leadership and whose leaders were not held accountable to the people for explanation or justification of their decisions.

In terms of public engagement, the annual March event has become a fixture of the reform. It was repeated in March 2005, when some of the results from the 2004 QCEA and surveys were presented to the public for the first time. The Institute directors gave public reports on the reform's progress and took questions. The event was then held again, in March 2006, the Institute directors once more reporting to the public. In all three annual events, the Institute directors accepted comments and answered questions from the public. In addition, the 2005 and 2006 events included sessions with international panelists to bring worldwide expertise to education discussions in Qatar.

The Institutes have organized other important public events. A large event unveiled the new curriculum standards to teachers and the public. A series of engagements prepared the way for parents, teachers, and principals to use the data on the annual school report cards.

In February and March 2006, the Evaluation Institute released the first school reports cards. Parents received these report cards for each of their children's schools, along with a complete user's guide in Arabic and English to explain the source and meaning of the data and how parents can use the information. The Institute delivered a com-

plete set of school report cards to the principal of each school to serve as a reference for the principal and for interested teachers and parents. The public can also access the school report cards through an Internet retrieval system on the SEC website.

Progress in Establishing Independent Schools

Independent Schools Are Providing Modern Education Opportunities. The Independent schools are noticeably different from Ministry schools and incorporate many promising practices for educational improvement. Observations, interviews, and surveys show that the Independent schools are beginning to provide students in Qatar with state-of-the-art learning environments. To accommodate the demands of the new curriculum standards, Independent schools offer a 180-day school year rather than the shorter Ministry calendar. In addition, class sizes in Independent schools are much smaller than those in Ministry schools, with a maximum of 25 students instead of 35 to 40.

As part of a RAND follow-on evaluation, our RAND team formally observed the second school year for the Generation I Independent schools (and the first year for the Generation II schools). Our observations and interviews revealed much progress. Teachers in Independent schools have begun to redefine their role, viewing themselves as facilitators of learning rather than the "teaching machines" many felt themselves to be in the Ministry schools. Also, these teachers now report that because they are responsible for curriculum and learning outcomes, they spend more time thinking about the goals of the lessons they present and are more likely to reflect on their practices. Curriculum development groups organized in many of the Independent schools to coordinate teaching and learning have been an important contributor to this reflection; teachers now report working more closely together to design curriculum and assure continuity across grade levels.

Independent school teachers—both Qatari and non-Qatari—are receiving a good deal of professional development. This high availability of professional development for all teachers contrasts sharply with the situation in the Ministry schools, where early-career Qatari teachers receive small amounts of professional development, and non-Qatari teachers are not eligible for any professional development.

Teachers and parents in the Independent schools confirm that there is substantial difference between the Independent and Ministry schools. In fact, these differences sometimes confuse parents. Almost all parents used unchanging Ministry texts when they were students and are concerned about the absence of textbooks in some Independent schools. A few parents even expressed worry because their children now enjoy school—Can this be a good thing? The reasoning is that if a child enjoys school, the curriculum must be too easy.

Data from the Spring 2005 Teacher Survey that all teachers in Qatar were asked to complete (and nearly all did) suggest that classroom practice in Independent schools looks very different from that in Ministry schools. For example, computers are used much more often in Independent school classrooms. Teachers in Independent schools report that they are more likely to explain the reasoning behind an idea when they are teaching, and that students are much more likely to be working together in small groups. Compared with Independent school teachers, Ministry teachers report substantially more student completion of worksheets and workbooks in classrooms, as well as more presentation of information while the class listens.

The best evidence of progress would be higher student test scores—evidence that will remain unavailable until more years of data are collected and analyzed. But it appears from the data that are available that the reform is taking hold in the Independent schools.

Independent Schools Are Offering Variety and Choice. Another specific accomplishment of the reform is that it allows parents to choose different educational approaches for their children. The Generation I schools introduced diverse programming, providing a variety of schooling options. Although all Independent schools have adopted the new curriculum standards, they have done so using different models—among them, they offer British, American, and Arab curricula.

In September 2005, 21 additional Independent schools (the Generation II schools) opened their doors; 13 more opened in September 2006. The current projection is that just two years after the first Independent schools opened, and four years from the reform's inception, the new schools will be serving a significant portion of the former

Ministry student population. Many parents have accepted the new schools as desirable options for their children.

In this region of the world, the institution of a system that relies on the freedom to choose from a variety of schooling options in the government sector is quite an accomplishment. The Independent schools will eventually offer real parental choice: Waiting lists for places indicate a demand for these schools even in the absence of empirical evidence that they increase student learning. In addition to the choice being offered to them by the system, parents will have more of a presence and a voice in the new schools. Independent schools are required to incorporate plans for parental involvement, and parents now serve on school advisory boards, participate in workshops, and are forming parent associations.

Reform Has Been Extended to Higher Education. As another sign that the reform is spreading, in March 2005, the SEC established the Higher Education Institute to oversee scholarship programs that would enable Qatari students to study at Education City universities and abroad. This Institute also plans to offer a counseling and advising service to all students in Qatar. The scholarship program and the counseling service are intended to encourage students to attend high-quality education institutions. This new postsecondary Institute complements the first two Institutes (Education and Evaluation), making it possible to offer students in Qatar a complete education infrastructure that focuses on quality from early childhood through adulthood.

Recommendations for Further Development and Sustainment of the Reform

The history of education reform efforts teaches that the process of planned educational change usually turns out to be more complex than anticipated. The complexity stems from at least three sources: the number of players involved, the number of factors that must be aligned to support fundamental improvement, and the need to appropriately localize the reform design.

A reform often starts with a small group of people who share the same vision and goals. As the reform is implemented at scale, the number of people involved expands dramatically, and maintaining fidelity to the original vision within such a large group becomes a challenge. In addition, implementation takes place in a particular context and is affected by factors in that context. Every wide-scale reform must adapt to new local conditions to some degree; the crucial challenge is to distinguish between adaptations that align with the reform's principles and thus will strengthen the design, and adaptations that are contrary to the reform's principles and thus will weaken the design.

Many of the challenges faced in this project have been faced in efforts to reform education in societies much different from Qatar's, and even in reform efforts in sectors other than education. These challenges stem from the fact that any successful comprehensive reform must recast the way institutions and individuals think and behave in order to improve their performance.

RAND identified several recommendations to inform policy in the future as the Institutes rely progressively less on external consultants. We think these recommendations will further develop the reform and help Qatar to sustain it in the future.

Continue to Build Human Capacity

The reform's early years have seen international expertise being relied on to supplement locally available personnel. This expertise has come in the form of both international staff helping to carry out the Institutes' missions and SSOs working with the schools. These international staff and contractors are helping to build Qatari human resources that will be able to sustain these programs in time. When expatriates are recruited to work in the Institutes, the Institutes should ensure that Qataris with appropriate experience are in place so that they can increase their own capacity as they work with the expatriates.

SSOs and other professional development providers are in place to enhance the capabilities of both Qatari and non-Qatari teachers and administrators in the schools. As teachers and principals gain experience with the new standards and student-centered pedagogy, they

could form a cadre of trained personnel that the Education Institute could use to train others.

Because capacity takes time to develop, we suggest that the SSOs continue to work with their schools beyond the start-up phase and first year. Even if their level of effort decreases after the first year, the SSOs will be needed for some time to contribute to the effort of building significant capacity in the schools and to cement reform practices.

We also recommend that the SEC evaluate the performance of expatriate staff and contractors partially on the basis of how well they increase local capacity. And because more staff and resources may be necessary to execute a task and build capacity at the same time, we recommend that the SEC include in its staffing plans and contract budgets the resources needed to accomplish both goals.

Continue to Promote the Principles of the Reform

The reform upgrades the basic educational elements of the system in a general way, but the particular implementation of the Independent School Model rests on the four principles of autonomy, accountability, variety, and choice. These principles are not well known in the Ministry system and thus can be both difficult to learn and frightening for staff coming from that system. Many of the international staff that joined the reform in its early years had former experience with these principles and helped spread them in Qatar.

If the reform's particular implementation is to endure, it is important that the SEC reinforce the four principles as Qatari staff take on increasingly more day-to-day responsibility for the reform. The SEC and the Institutes should consider the use of regular forums and mechanisms, such as written materials and discussions, to reinforce these principles. In addition, the Institutes can use the principles to help set performance goals for each employee. By regularly reviewing employee performance against not only the specific goals, but also the general principles, the Institutes can integrate these principles into their organizational structure and staff behavior.

One essential pairing of two of the principles is that participants should have autonomy to determine their actions and be held accountable for results. This extended principle applies to the organizational

design of the SEC and Institutes, as well as to the operation of the Independent schools.

The SEC and the Institutes have important roles to play in further developing this extended principle. The Education Institute should monitor schools based on the quality of their educational program, especially student outcomes, and provide schools with the support and interventions they need to be successful. Institute staff, school operators, and teachers will need to use the excellent data collected by the Evaluation Institute to monitor and improve their own performance. The school report cards provide an opportunity to educate parents, school operators, and teachers on how to use data to make sound decisions about education.

The principles of this reform are largely unknown in the pre-reform education system of Qatar. Therefore, it is essential that the SEC reinforce these principles throughout the new system, including in the Institutes and the schools and, as noted below, in conjunction with other sectors in Qatar.

Expand the Supply of High-Quality Schools

The success of the reform's particular design rests on establishing high-quality Independent schools, and the design specified that these schools might come from a number of sources: private schools, employers, and other large organizations. To ensure wide participation and high quality, the Education Institute has offered a number of incentives to make it easier for operators to start new schools. For example, the funding formula has been generous by local standards, and the Institute took responsibility for locating and preparing school facilities. Operators thus had little need to invest their own capital in new schools. To date, however, the Independent schools have all come from one source: All of them are converted Ministry schools under new management.

It is important that the SEC's policies encourage the best possible operators to open schools. For the reform to succeed, operators must have access to appropriate financial incentives and programmatic support in a favorable regulatory environment. In addition to enhancing school quality, the SEC should continue to encourage variety in schooling. Variety offers parents real choices for securing the

best educational programs for their children. Also, variety often leads to improvement by demonstrating promising models and encouraging local experimentation.

Counter to these principles, the SEC recently required that school operators be Qatari citizens with a background in education. We argue, in contrast to this course, that it is time to broaden participation by inviting experts and organizations from other countries and of other nationalities to open schools, as the Qatar leadership has already done at the postsecondary level. The criteria for operating a school should be clearly communicated to potential operators and should form the basis for operator selection without regard to nationality.

Integrate Education Policy with Broader Social Reforms

The education reform resides within a broader social, political, and economic system, which includes social welfare policies and a civil service system that rewards people in government positions. Civil service regulations, for example, protected the Independent school employees in that they could, if fired by the school operators, return to the government job pool. The traditional promise of a government job also undermines the motivation of Qatari students to do well in school, although the Qatari labor market is beginning to change. These and other policy areas put limits on the success of the reform and might need revision to better support it.

The Qatari leadership's vision cannot be achieved by reform of a single sector in isolation. Achievement of this vision requires (1) considered, careful decisions about what needs to be addressed in other sectors, including the social sector, and (2) an implementation process for those aligned policies in other sectors. The SEC and the Institutes should engage in discussions with government officials from other sectors about the integration of social policies and seek a coordinated development strategy to address all related policy domains.

Implications: Education Reform Beyond Qatar

This project offers the promise of greatly improved education for the children of Qatar. Thanks to this reform, there are Qatari children already in learner-centered classrooms in improved facilities where they are guided by better-prepared and better-trained teachers using internationally benchmarked standards. As the reform progresses, these benefits should extend to more of Qatar's children.

The rich data system and the variety of schooling options will enable Qatar to examine education processes closely, test theories and relationships in the education system rigorously, measure outcomes objectively, and implement improvements as needed. This data infrastructure could also allow international educators and researchers to measure the effectiveness of the different approaches chosen by Qatar's schools. These measurements would deepen the collective understanding of education's basic mechanisms and of how schools and education systems function across a variety of contexts.

The implementation experience demonstrates that a deeply religious and traditional society such as Qatar can undertake and embrace a progressive education reform agenda based on international standards, new structures, and new options for parents and children. Some Qatari parents are, of course, understandably skeptical about the ability of the Independent schools and curricula to transmit the values important to them; but many other Qatari parents have enrolled their children in these schools and are enthusiastic about the reform's potential. A key element in the reform is that parents are free to choose an Independent school or to remain in the Ministry system. Those that have joined the new schools have made a conscious choice to do so.

The design and implementation also offer a model of how a reformed system can be built alongside an existing one, thereby providing more choice and variety along with the promise of improved quality. Other countries can learn from the features of this parallel-path approach to institutional modernization and improvement.

As new as the reform in Qatar is, some of its principles are already spreading to other countries in the region. The emirate of Abu Dhabi in the United Arab Emirates recently adopted a similar strategy of

public financing for private providers of education (Abdul Aziz, 2006). A number of the contractors supporting the Qatari reform are participating in Abu Dhabi's efforts as well.

In May 2006, the Secretary General of the GCC praised the Qatari initiative, particularly its curriculum standards. Since the curriculum standards are the foundation for teaching, learning, and accountability, his praise represents a major endorsement of the approach taken in Qatar. The Secretary General noted that the set of standards "caters to the needs of the employment market" (Peninsula, 2006), an acknowledgment of the region's increased concern about preparing students for later life.

The leadership of Qatar has embarked on a bold course to improve its education system. Qatar's example should serve to point the way for other countries to examine their own education systems, begin the improvement process, and incorporate some or all of this reform's principles into their plans for reform. The promise offered by the Qatar education reform and the strong interest it has elicited throughout the Gulf states is that children in the region will be better prepared in the future to think critically and to participate productively in their workforces and societies.

APPENDIX

RAND Staff

This appendix lists the RAND staff who took part in the education reform project. Within each team, staff are listed alphabetically, and an asterisk (*) following a person's name indicates that he or she was resident in Doha during the project.

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