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Introduction

In 2001, the leadership of the State of Qatar asked the RAND Corporation to undertake a broad-based examination of the nation's kindergarten through grade 12 (K-12) education system and propose a strategy for reform. This request was motivated by concerns that, in general, the 71,000 students served by the system in 220 single-gender schools were not being served well: students were leaving Ministry of Education schools without the academic proficiency necessary to achieve success in post-secondary education or in the rapidly expanding Qatari labor market.

RAND's analysis identified key system strengths and weaknesses, most of which were already well-known. A key problem was the rigidity of the Ministry of Education, whose insular, bureaucratic structure discouraged innovation and limited communication both within the Ministry and with stakeholders. School-level administrators had little authority. The Ministry assigned teachers to schools without consulting principals. Teachers with poor performance reviews were often "demoted" to lower grades, and teachers were often assigned to teach subjects for which they had little or no training.

Qatari teachers had few options for professional development, and expatriate teachers had none. Ministry inspectors regularly visited classrooms, but their job was to ensure compliance with the mandated curriculum; they provided no support to teachers. The Ministry provided texts linked to a single, nationally mandated curriculum that was revised at the rate of one grade level per year. As a result, much material was out of date. Both curriculum and instruction emphasized rote memorization and adhered to a rigid schedule that permitted no alterations to accommodate student progress or need for additional instructional time around certain topics.

At the system level, no accountability mechanism for school or student performance existed. Substantial education resources were concentrated in the Ministry to support a large central Ministry staff, leaving limited funds for infrastructure. Many school buildings were old, and many classrooms were overcrowded and lacked modern equipment

and supplies. Teachers' salaries were low compared with those of other nations. Several previous studies had highlighted the very same problems. But these earlier reports had been consigned to executive bookshelves because they offered no direction for change. RAND's work was unique in that it offered multiple reform options and a clear path to implementing the chosen option. RAND's report concluded that the extensive concerns about the Ministry system and the past failures to reform it incrementally argued for a system-changing reform. RAND recommended that the basic educational elements of a standards-based system had to be put in place. These included the development of clear curriculum standards that would define the desired outcomes of schooling: what students were expected to know and be able to do at each grade level. These standards would be aligned with curriculum, assessments, and professional development. To promote continuous improvement, the reform should call for education data to be collected, analyzed and disseminated to the public in the form of student assessment results and school report cards.

RAND offered Qatari leadership three governance reform options:

- 1) modifying the centralized Ministry structure to make it more responsive,
- 2) adopting a decentralized charter school-like system,
- or 3) providing vouchers for families to enroll their children in private schools.

The Emir chose the second option, which was named the Independent School (IS) Model, but expressed a long-term preference for the voucher approach. The reform emphasized four principles that had little precedent in government education systems in the region. Some of these principles would be implemented immediately; some would become operational over time:

- **Autonomy.** The new, Independent schools operate autonomously, subject to the conditions specified in a time-limited contract granted by the state.

¹ Most of the material in this paper is derived from two sources: Brewer, D., Augustine, C., Zellman, G. L., Ryan, G., Goldman, C. A., Stasz, C., Constant, L., Education for a New Era: Design and Implementation of K-12 Education Reform in Qatar. Santa Monica, CA: RAND-Qatar Policy Institute, 2007, and Zellman, G. L., Ryan, G., Karam, R., Constant, L., Salem, H., Gonzalez, G., Orr, N., Goldman, C. A., Al-Thani, H., Al-Obaidli, K., Implementation of the K-12 Education Reform in Qatar's Schools, Santa Monica, CA: RAND-Qatar Policy Institute, 2009. Most of the discussion of the reform plan and the pre-reform context may be found in Brewer et al, 2007; information on the reform's early performance may be found in Zellman et al., 2009. Since these two sources dominate the text, they are not cited again; other sources are cited as appropriate.

- **Accountability.** Independent schools are held accountable to the government through regular audits and reporting, stakeholder feedback, and national student assessments aligned with new internationally-benchmarked curriculum standards.
- **Variety.** Interested parties (not necessarily educators) may apply to operate independent schools, and diverse schooling options are to be offered.
- **Choice.** Parents are allowed to select the school that best fits their child's needs. However, choice would be very minimal at first because only a small number of Independent schools would open each year.

RAND developed a detailed plan for implementing the chosen reform model that included three new government institutions:

- **The Supreme Education Council**, representing the “end users” of the education system (such as employers and higher education) and responsible for setting national education policy.
- **The Education Institute**, responsible for overseeing and resourcing the new, Independent schools; developing national curriculum standards in Arabic, English, mathematics, and science; and developing teacher training programs aligned to the new standards.
- **The Evaluation Institute**, responsible for monitoring student and school performance in both Ministry and Independent schools; designing and administering national tests and surveys of students, teachers, parents, and principals; producing annual “school report cards;” and operating a new national education data system.

A goal was set to open the first ISs in fall of 2004; this schedule did not allow much time to make required structural, policy, and operational changes. Once the Supreme Education Council and the Institutes were established by Qatari law in 2002, reform implementation began in earnest.

Guidelines for the Independent schools were created that would constitute the policies and proce-

dures for operating an IS, and would provide a structure for applications to open a new school. IS operators could specify grade levels, age range and gender and student behavior policies; they were free to organize student learning and assessment according to the school's mission and goals. Requirements for operators were few:

- Participate in the nationwide student assessments
- Comply with all financial regulations
- Produce an annual report
- Cooperate with and participate in other Institute data collection activities

Unlike the Ministry schools, where virtually every aspect of school finance was handled centrally, Independent schools developed their own budget, were given funds from the Education Institute on a per-pupil basis, and were permitted to spend these funds subject only to general financial regulations.

The curriculum standards development process produced standards in Arabic, English, mathematics, and science comparable to the highest in the world. Of particular note are the new Arabic standards, which stress practical language skills using a variety of materials, e.g., recipes and newspapers.

In 2004, the Evaluation Institute tested every student in the Ministry schools to document achievement levels before the reform's ISs 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.

The first generation of twelve Independent schools opened in 2004; a remarkable accomplishment. Each year the number of ISs increased; by fall of 2006, 46 Independent schools were in operation alongside the more-traditional Ministry of Education schools.

II. Evaluating the Progress of the Reform

In 2005, RAND was asked to evaluate the implementation of the reform in the Independent schools. From November 2005 through May 2007, RAND conducted a case-study analysis of 12 ISs and four Ministry schools. Data was drawn from extensive classroom observations; interviews with principals and administrators; and focus groups with teachers, students, and parents. RAND looked for evidence that key school-level reform elements

had been implemented, including student-centered classroom instruction; efforts to promote students' acquisition of analytic and critical thinking skills; implementation of curriculum standards in Arabic, mathematics, and science; use of English in mathematics and science classes; and support for teachers' professional development. In addition, RAND used national survey data to compare school characteristics, teacher characteristics, and instructional practices in Independent and Ministry schools. RAND also analyzed student performance data from the 2005-2006 Qatar Comprehensive Education Assessment. Study findings revealed that the reform had produced a number of positive effects during its short tenure.

Independent schools differed markedly from Ministry schools in their recruitment and professional development practices.

Operators of Independent schools had considerable autonomy to direct teacher recruitment, hiring, and retention. However, these decisions were constrained by the introduction of targets that specify a minimum percentage of Qatari teachers; hiring was further constrained because Qatari teachers perceived ISs to be too demanding. Teachers in ISs more often reported that they engaged in professional development activities consistent with the expectations of the reform – e.g., focused on instructional methods, use of technology, curriculum planning, etc. – than Ministry teachers did.

The move to a standards-based curriculum produced both difficulties and rewards for Independent schools.

The transition from relying totally on the Ministry's entirely predetermined course of study to selecting or developing an instructional program aligned with the new standards was not easy. IS teachers noted the enormous extra workload required for curriculum development. Some principals, teachers, and parents expressed a lack of confidence in the teachers' ability to perform this function. Nevertheless, IS teachers reported that they *often* used material developed *with* others in their school. Collaboration around curriculum and materials was cited by many as a positive feature of their work. Teachers in ISs were also much more satisfied with their school's physical environment and resources than Ministry teachers were. Curriculum materials were not always completely aligned with the curriculum standards. Use of English in mathematics and science classes was uneven due to lack of English proficiency among both teachers and students. Indeed, much time in these classes was devoted to translating English into Arabic.

Classroom practices in Independent schools were more student-centered than in Ministry schools.

The reform aimed to significantly change the classroom learning environment by focusing on student needs and actively engaging students. The predominant method of delivering instruction in Ministry classrooms was whole-group instruction, with the teacher standing in front of the class and lecturing, answering student questions, or calling on students to recite or to answer questions. Students were almost never asked to analyze or synthesize any facts or material; most of the cognitive work was limited to demonstrating knowledge through recall of information.

In contrast to this approach, the reform design emphasized student-centered pedagogy, which puts student needs at the center of instructional practice and typically includes varied instructional groupings such as small groups and one-on-one instruction. To promote such pedagogy, the reform placed a strict 25-student limit on class enrollments (Ministry classrooms sometimes exceeded 40 students). Teachers in Independent schools were encouraged to promote higher-order thinking in their students by asking for more than the memorization and recitation of facts. They were encouraged to promote higher-order thinking by engaging their students in cognitive work, including comprehension, application, analysis, synthesis, and evaluation.

RAND's analysis indicated that whole-group activity continued to be the most frequent instructional format in both Independent and Ministry schools; there were no differences between the two school types in the use of whole-group instruction. However, IS teachers used one-on-one and small groupings with significantly greater frequency than Ministry school teachers did. Other data indicates that teachers in Independent schools were more actively trying to engage students than Ministry teachers were. While the content of the curriculum standards was being conveyed through new pedagogical approaches, demands for higher-order thinking were still relatively limited. Nevertheless, Independent school teachers placed significantly higher cognitive demands on their students, more often asking them to demonstrate comprehension and application of new material, and to synthesize and evaluate knowledge, the latter something that Ministry teachers did not do at all. RAND also examined a number of teacher behaviors found to motivate students, an important effort in a nation where motivation to achieve academically is some-

times limited because of guaranteed lifetime government support.

Teachers in Independent schools were more likely to make eye contact with students and were significantly more likely to speak to students at the student's eye level. This latter behavior is particularly important because it suggests that Independent school teachers were moving around the classroom and bending down to speak with students as they worked at their desks and tables rather than speaking to students from the front of the classroom.

Students and parents demonstrated a higher level of satisfaction with the Independent schools.

During these early years of the reform, students in Independent schools were more interested in and prouder of their schools than Ministry students were. Independent school teachers reported that the students seemed to be more motivated to learn. Parents reported higher levels of involvement in and greater satisfaction with the Independent schools than parents of children in Ministry schools did.

Students in Independent schools generally outperformed their Ministry peers, but overall achievement remained low.

Standardized testing results indicated that students in ISs outperformed students in Ministry schools in English and Arabic. Similarly, IS students who took the mathematics and science assessments in Arabic tended to score higher than did Ministry school students.

However, when assessed in English, IS students tended to receive lower math and science scores than did their Ministry peers, who were assessed in Arabic. But the higher performance of IS students must not obscure the reality that most Qatari students are performing poorly. Qatar's 2007 TIMSS performance puts it at or close to the bottom in international comparisons. Qatari students ranked 49 out of 49 participating nations in mathematics and 48/49 in science.²

III. Prospects and Challenges for Qatar's Education System

Qatar's K-12 education reform effort achieved important successes in its early years. As of 2010, there are 165 Independent schools serving about 80,000 students. In 2009, the Emir issued a decree that made the SEC the single national authority for government-funded schools.³ The SEC made the remaining Ministry schools "semi-independent schools" for a year until they converted to IS status. The SEC established high-capacity professional development programs to upgrade the skills of Ministry staff to prepare them to work in the new system.

Nonetheless, policymakers in Qatar face a number of challenges and constraints in moving to the full Independent School Model, including poor student performance (described above), parental concerns about Independent schools, inadequate school and staff capacity, and limited parental choice. These challenges are described below.

III.1. Serious parental and public concerns about Independent schools

Early in the reform, the public began to question whether private operators should be allowed to earn profits for providing publicly funded education. Parents worried, particularly in the first years of the ISs, that operators were skimping on the purchase of materials to increase their profits; they also worried that the lack of a single textbook, the hallmark of a Ministry education, implied lower quality instruction. The Education Institute responded to textbook concerns by developing a list of acceptable materials and asking ISs to either select materials on the list or justify others. The SEC responded to the concerns about profit by making all ISs non-profit in 2006 and by communicating positive messages about the reform's aims, design, and implementation.⁴

Parents included in RAND focus groups expressed concerns that English was taking precedence over Arabic in Independent schools, and that their chil-

² Mullis, I. V. S., Martin, M. O., & Foy, P. (with Olson, J. F., Preuschoff, C., Erberber, E., Arora A., & Galia, J.). (2008). TIMSS 2007 international mathematics report: Findings from IEA's Trends in International Mathematics and Science Study at the fourth and eighth grades. Chestnut Hill, MA: TIMSS & PIRLS International Study Center Boston College; Martin, M. O., Mullis, I. V. S., & Foy, P. (with Olson, J. F., Erberber, E., Preuschoff, C., & Galia, J.). (2008). TIMSS 2007 international science report: Findings from IEA's Trends in International Mathematics and Science Study at the fourth and eighth grades. Chestnut Hill, MA: TIMSS & PIRLS International Study Center Boston College.

³ *Bitanzim Almajlis Ala'ala Liita'aleem* [Organization of the Supreme Education Council]. (2009). Emiri decree no. 14 of 2009. Doha, Qatar: Official Gazette.

⁴ Supreme Education Council, "Public concerns about Independent Schools clarified," news article, September 19, 2005. As of February 28, 2010 at <http://www.english.education.gov.qa/content/resources/detail/2195>

dren might lose their facility with Arabic. In a number of newspaper articles, critics questioned the compatibility of the reform with traditional Qatari values, citing lower priority given to the Arabic language and religious education in Independent schools, and arguing that practices like charter schools were foreign and therefore inappropriate for Qatar.⁵ The SEC continued to respond to these criticisms with positive messages about the reform.⁶

III.2. Limited Staff and School Capacity

Qatari men prefer other occupations to teaching, so most of the male teaching positions are filled by expatriates (about seven percent of male IS secondary teachers were Qatari in 2006). In the past, Qatari women have favored teaching as a career because of relatively short hours and a gender-segregated workplace. In the last decade, however, many more career opportunities have opened and interest in teaching is declining among Qatari women. In 2006, only about 26 percent of female IS secondary teachers were Qatari; lower grades had a greater share of Qataris.⁷

The government would like to see far more Qatari teachers in Independent schools; to achieve this goal, the SEC established Qatarization targets after the reform's implementation. These targets have not been enforced strictly as quotas, but schools have been given additional financing to help them attract Qatari teachers, who must be paid considerably more than expatriate teachers.

Most of the Qatari and expatriate teachers in the local labor market are current or former Ministry teachers; most regard teaching in the ISs as unattractive given the longer school day and the need to develop or choose curriculum and materials and write lesson plans. Science and math teachers need English fluency since these classes are to be taught in English in ISs.

Because operators make hiring and firing decisions, teachers feel they lack job security. Although ISs offer, on average, higher salaries than Ministry schools, many Ministry teachers in our focus groups viewed these higher salaries as insufficient to offset these IS disadvantages. Since 2007, the

Education Institute has been trying to make IS positions more attractive by increasing IS compensation for Qataris and providing teachers greater job security.

These labor market conditions and the policy responses to them raise two major concerns. Providing teachers with more job security restricts the flexibility of school operators. Additionally, local teachers were mostly trained in the Ministry system and do not want to be in ISs; they may rely on traditional teaching practices rather than adopting new reform-oriented practices once in ISs. Education Institute professional development support may mitigate this problem.

The supply of spaces in high-quality government schools is not keeping up with demand; ISs and the best private schools have long waiting lists. Currently, Independent schools are formed only by converting from Ministry schools, which limits supply. The SEC recently has raised the IS classroom limit from 25 to 30 students to increase the supply of IS seats, and has launched two programs to increase other high-quality schooling options.

A new voucher program, begun in 2008-2009, permits families to take public funding to private schools. Currently, a few families are receiving these vouchers; the SEC intends to expand the program in the future.⁸ The government has also sponsored a small number of branch campuses of elite international private schools.⁹ If they meet program requirements, these branch campuses can accept vouchers, which will encourage Qatari enrollments. As of early 2010, three branch campus schools have opened; one existing private school participates in the voucher program. These new programs are promising but will have to expand significantly to have a noticeable effect on demand for high-quality school places.

III.3. Reduced Operator Autonomy and Pool

In response to public concerns, the SEC has reduced operator autonomy and limited variety in operators' backgrounds. Operators were asked to staff their schools to meet new Qatarization goals, which meant that they could not always hire without concerns about teacher nationality. In March

⁵ See, for example, Al Kubaissi, A. J. (2008, September 20). *Dirasa Hawl Nizam Alta'aleem (Ta'aleem Limarhala Jadida)* [A Study about Education System (Education for a New Era)]. Al Raya (Doha, Qatar), pp. 27-28.

⁶ Al Khater, M. (2005, October 4). Untitled column. Al Raya (Doha, Qatar).

⁷ Stasz, C., Eide, E., Martorell, F.: Post-Secondary Education in Qatar: Employer Demand, Student Choice, and Options for Policy, Santa Monica, Calif.: RAND Corporation, 2007. As of March 4, 2010: <http://www.rand.org/pubs/monographs/MG644/>.

⁸ Supreme Education Council, "The Educational Vouchers Program," undated. As of February 28, 2010 at <http://www.english.education.gov.qa/voucherprogram/index.htm>.

⁹ To build national identity, voucher and branch campus schools must agree to include Arabic, Islamic studies, and Qatari history in their curriculum for students receiving government funding, although they are permitted to offer Arabic as a second language, which carries less stringent requirements. These schools also must have a current international accreditation, although there are plans for Qatar to develop a national school accreditation system in the future, which will allow schools to select either national or international accreditation.

2006, a new policy required that Independent schools be organized as nonprofits with a single Qatari operator who was qualified to be and would serve as the school's principal.¹⁰ This forced non-Qataris and those who came from outside the Ministry system to leave their positions as school operators, resulting in far less diversity among operators and schools.

III.4. Limited Parental choice

Due to lack of high-quality school spaces, a key reform accountability mechanism – parental choice – cannot fully operate. Parents often struggle to find a place in any IS and have no or few options to move to another publicly-funded school. Unmet demand reduces Independent schools' motivation to improve to avoid losing revenue when seats are not filled.

Since the market accountability envisioned in the original reform plan cannot function without significant increases in school supply, expanding non-choice-based performance incentives based on test scores and parental satisfaction measures might induce schools to improve student learning until choice can fully function as an accountability mechanism.

IV. Conclusions

Qatar has embraced an ambitious reform strategy to overhaul a weak public school system. In the space of a few years, the country has put the fundamental components and mechanisms of its reform in place. The Independent schools have been established, and a sophisticated assessment and monitoring system has been designed and implemented; internationally benchmarked curriculum standards in four subjects have been developed and integrated into school-selected curricula. The reform has defined clear goals for K-12 education, and through monitoring, has established high expectations for real results. Much of the credit for these accomplishments can be attributed to the strong political will and substantial financial resources that have buttressed the reform from its very beginnings. But such comprehensive change has not been easy. The reform introduced funda-

mentally new mechanisms to provide schooling, and has challenged the public's traditional views about the role of private actors in publicly funded education. The SEC has tried to communicate the positive aspects of the reform, but debate about the reform and its achievements continues in the popular press. The supply of Independent schools and other high-quality school spaces has not kept up with demand, so market forces are not imposing accountability on school operators as the reform design intended. The SEC has also instituted a number of new policies that reduce operator autonomy and variety.

Policymakers have increasingly resorted to regulatory approaches both to address public concerns and to hold schools accountable. But use of regulatory accountability methods without a clear mechanism to encourage performance improvement risks a return to the practices of the former Ministry. This effect may be reinforced as more administrators and teachers from the old system join the new system, many reluctantly. While it is too early to tell, these policies and practices could limit the variety of program offerings that parents have to choose from and the performance of the system as a whole. Initiatives like the voucher program and the establishment of private school branch campuses have potential to counter these trends, but only if they are expanded significantly.

These challenges are likely to be echoed in other countries that attempt such comprehensive reforms. System-changing reform requires all stakeholders to examine and modify long-held beliefs, attitudes, and behaviors, and for reform leaders to anticipate dissatisfaction and deal with it in ways that do not threaten the reform. If the main source of personnel is the old system, reform leaders need to prepare to invest heavily in professional development to equip personnel with new skills. In addition, the new system will need a viable accountability mechanism to encourage performance improvements and discourage a return to old practices. Policymakers must monitor how well the intended accountability mechanism is functioning, and, if it is not providing sufficient impetus for improvement, must adopt other mechanisms that will better support the reform's goals.

¹⁰ Supreme Education Council (2006). "New Policies Correct System's Weaknesses and Support Reform." June 7. As of January 9, 2009: <http://www.english.education.gov.qa/content/resources/detail/3568>.