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TECHNICAL REPORT

Lessons from the Field

Developing and Implementing the Qatar Student Assessment System, 2002–2006

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Prepared for the Supreme Education Council



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Summary

Background

The Arabian Gulf nation of Qatar has recently positioned itself to be a leader in education reform. The country's leadership has initiated a number of changes to Qatar's kindergarten through grade 12 (K–12) and higher education systems. In 2001, the Emir of Qatar, His Highness Sheikh Hamad Bin Khalifa Al Thani, asked RAND to help redesign the country's K–12 education system. RAND recommended that Qatar institute a comprehensive education reform with a standards-based education system at its core. In 2002, implementation of the reform initiative, Education for a New Era (ENE), began.

ENE is based on four core principles: *variety* in educational offerings, *choice* for parents to select schooling options for their children, *autonomy* of newly opened schools, and *accountability* for all government-sponsored schools in Qatar, including newly developed Independent schools, traditional public schools operated by the Qatar Ministry of Education, and private Arabic schools that follow the Ministry of Education curriculum in a private-school setting.

Central to ENE was the development of internationally benchmarked curriculum standards in modern standard Arabic (*fusHa*), English as a foreign language, mathematics, and science for students in grades K–12. The curriculum standards include both content standards, which note what students should be taught in each grade, and performance standards, which note what students should know by the end of each grade. Curricula, assessments, and professional development are aligned with and follow from the curriculum standards. In the 2004–2005 academic year, 12 Independent schools opened and began operating alongside the traditional Ministry of Education schools. The Independent schools are governed by the Supreme Education Council (SEC), which was established as part of the reform plan. Independent schools follow the established curriculum standards, but principals of the schools have more autonomy to make decisions about educational approach (e.g., curricula used in the classrooms), staffing policies, and budget spending than do principals in Ministry of Education schools. More Independent schools have opened in each academic year, with 85 operating during the 2008–2009 school year. Ministry schools are still in operation, running in tandem with the Independent school system.

The SEC includes two new government institutes. The Education Institute developed the standards in 2005, funds and oversees the Independent schools, and provides professional development for teachers and staff in Ministry and Independent schools. The Evaluation Institute developed and administers the standards-based assessments as well as the student, parent, teacher, and school administrator surveys. School-level results from the surveys and assessments are reported on publicly available school report cards. Parents can use the school report

cards to inform their decisionmaking on where to send their children to school. Starting in 2006, individual- and classroom-level reports are provided to parents and teachers, respectively. Parents can use the individual reports to follow their children’s progress from year to year, and teachers can use the classroom reports to help guide their teaching.

Building the Qatar Student Assessment System

From 2002 through 2005, RAND assisted the SEC with the implementation of the early stages of the reform. In that time, RAND and the Evaluation Institute’s Student Assessment Office (SAO) crafted a design for Qatar’s standards-based student assessment system, the Qatar Student Assessment System (QSAS). The design called for the QSAS to provide (1) information about school performance to the public to motivate school improvement and promote informed parental choice; (2) feedback to teachers, helping them tailor instruction to support the needs of student bodies; and (3) detailed information to policymakers about the education reform’s progress in general and, specifically, about Independent schools’ performance for accountability purposes.

To serve these three purposes, the initial design of the QSAS included multiple types of standardized and systematic assessments, each measuring the learning and achievement of students in a variety of skills and competencies described in the newly developed curriculum standards. Examples of such assessments included a large-scale summative assessment administered at the end of the school year, performance assessments (such as hands-on science experiments) that would be evaluated by a team of local experts, and in-class, computer-delivered formative assessments administered throughout the school year. The results of the assessments could be tracked in a database managed by the Evaluation Institute.

In the first years of the reform, RAND and the SAO focused on the development of one component of the QSAS—the Qatar Comprehensive Educational Assessment (QCEA). The QCEA is the first national, standardized, standards-based assessment in the region. The QCEA measures student learning and performance according to the requirements set forth in the curriculum standards using a multiple-choice and open-ended question format. It is a summative assessment and is administered at the end of the school year.

The development of the QSAS and QCEA involved contractors and experts from around the world: Europe, the Middle East, South America, and the United States. Through the QCEA development, implementation, and process to align its questions with the Qatar curriculum standards, the SAO and RAND worked closely with test developers Educational Testing Service (ETS) and CTB/McGraw-Hill (CTB); the curriculum standards-development contractor, the Centre for British Teachers (CfBT, now the CfBT Education Trust); and the contractor charged with assisting in the development of the national educational surveys and administration of the surveys and assessments, the National Opinion Research Center (NORC).

The first administration of the QCEA occurred in April and May 2004, before the opening of the Independent schools or the finalization of the new curriculum standards, to students in grades 1–12. The 2004 test provided a snapshot of student achievement vis-à-vis general standards to measure what a student is expected to do or know in mathematics, science, English as a foreign language, and Arabic. In 2005, the QCEA was revised to align it with the curriculum standards. In 2004, the results of the QCEA were reported as percent correct. In 2005 and 2006, it was administered to students in all government-sponsored schools in

grades 4–11. (In 2005, math, English, and Arabic assessments were given to students in grades 1–3.) Starting in 2007, the QCEA was administered only to students in the Independent schools. From 2005 onward, the QCEA reported performance levels, with students measured according to five levels: meeting standards, approaching standards, below standards—may approach standards with some additional effort, below standards—may approach standards with considerable additional effort, and below standards—may approach standards with extensive additional effort.

In each year from 2004 through 2006, the QCEA was fielded to about 88,000 students in Ministry, private Arabic, and Independent schools—approximately 95 percent of the target population. Qatar now has the tools at its disposal to understand the educational achievement of its student population and inform policymaking. Prior to these reform efforts, little systematic, objective information on student achievement and skills existed. Although a number of changes have been made to the testing operation since its inception, and a number of improvements to the QSAS can still occur, the advent of the QCEA has forever changed the educational landscape of the country.

Purpose and Approach of This Report

This report documents the initial design of the QSAS and chronicles the development and administration of the QCEA. The work reported here was carried out jointly by RAND and the SAO. In this report, we draw lessons for future assessment development in Qatar and for education policymakers in other countries considering a standards-based approach to student assessment.

In writing this report, we relied on three sources of information. First, to contextualize the design of the QSAS and QCEA, we reviewed the fields of accountability, standards-based education, assessment theory, and practitioners' guides to developing assessments. Second, to elaborate on the decisionmaking process for key policies, we reviewed the minutes of meetings held between July 2002 and July 2005 among representatives from RAND, the SAO, the Evaluation and Education Institutes, and the contractors that assisted in the development and administration of the assessments. Third, to further explain decisionmaking processes, we reviewed internal memos—from both RAND and the SAO.

Limitations of This Report

Given the historical nature of this report, it is important to keep in mind several limitations. First, this report is limited in scope. It is not meant to be a testing technical report, nor do we assess the validity of the results of the tests to serve the hoped-for purposes. Although valuable and a necessary part of any testing effort, such an analysis is beyond this report's scope. A second limitation is that it provides only the perspective of the RAND and SAO teams and not those of the other Evaluation and Education Institute staff and contractors with whom we worked in aligning the assessments with Qatar's curriculum standards and in administering those assessments. A third limitation is that it was difficult, at times, to uncover who within the governance structure of the reform effort made certain decisions about the assessment system, so we are not always able to attribute decisions.

Lessons Learned

A number of important lessons emerged from our experience that can be useful to education policymakers in Qatar as they move the QSAS forward and to education leaders around the world considering implementing a standards-based assessment system. These are summarized in the remainder of this section.

The separation of standards development and assessment development in two offices hampered communication in terms of alignment. The design of the reform effort placed responsibility for developing the standards with one entity, the Curriculum Standards Office (CSO) within the Education Institute, and responsibility for developing the assessments with another, the SAO within the Evaluation Institute. Although few informal linkages developed, these proved too tenuous to encourage cross-office discussions. We recommend that, prior to implementation, formal linkages between standards-development and assessment-development authorities be built. One option to improve the alignment process is to have a permanent staff member with explicit duties to liaison between the two offices. Alternatively, the curriculum staff and assessment-development staff can be housed within the same office.

The timeline for developing a fully aligned standards-based assessment system was too short. The education leadership in Qatar expected to have a standards-based assessment system in place by the end of the 2004–2005 academic year—the first year that Independent schools were open. The SAO, RAND, and the test developers encountered a number of challenges in meeting this deadline: By 2005, the QSAS's goals, purposes, uses, and design features were laid out, but the SAO and RAND were unable to finalize a detailed blueprint or implement the system's features by this date. There were three reasons for this delay. First, given the tight timeline, the SAO and RAND decided to focus efforts on developing the core component of the QSAS, the QCEA, as it was to be the largest and most comprehensive component of the system. Second, in 2003 and 2004, the SAO had only three staff members, which limited the office's capacity to focus on the implementation of the QCEA alongside the implementation of other components of the QSAS. Third, the SAO, the test developers, and RAND worked with draft curriculum standards until they were finalized in 2005. Therefore, final decisions about the QSAS design could not occur until the standards were finalized. To allow for appropriate time to develop, pilot, and field a fully aligned, comprehensive assessment system, we recommend a minimum of three years, as suggested by experts (Commission on Instructionally Supportive Assessment, 2001; Pellegrino, Chudowsky, and Glaser, 2001), with even more time if performance-based assessments are to be applied. For education systems that may encounter similar staff challenges and the possibility of rapid policy shifts, as experienced in Qatar, we recommend five years.

Logistic and administrative constraints often took precedence over the substantive needs of the QCEA testing operation. In the first year of the QCEA, the Evaluation Institute made a number of operational decisions that prioritized logistical issues over substantive issues as a way to ease the perceived burden on test administrators and students. For example, for the pilot test of the QCEA in 2004, the length of test time was limited to one class period so as not to disturb the classroom schedule. However, the test developers noted that the amount of test time was inadequate—particularly for the mathematics tests, for which students were expected to use tools and other manipulatives when answering the questions. Test time was subsequently lengthened to accommodate the test's psychometric requirements and to ensure that the test was as fully aligned with the standards as possible. The prioritization of logistics may have

occurred because members of the Evaluation Institute in charge of test administration had no experience with delivering, coding, or managing a testing operation of the size and scope of the QCEA. We recommend that, prior to the administration of a test, the entities in charge of developing and administering the tests agree on administration processes and procedures that strike a balance between limiting student burden or fatigue and ensuring that appropriate analyses can be made from the tests' results.

Many testing policies did not consider existing research or analysis. A number of policies concerning the testing operation did not consider available research, which, in turn, confused schools and may have had potentially negative long-term effects. One example of this was having Independent schools move toward teaching mathematics and science in English and the subsequent decision to offer mathematics and science QCEA tests in English for schools that chose this option. These decisions were made without considering Evaluation Institute studies on whether this would be a helpful policy for the students, who may have trouble mastering mathematics and science content in a second language. We therefore recommend that, in making decisions, education policymakers consider research findings and empirical evidence. If the Evaluation Institute, the Education Institute, and the governing body of the SEC are to make informed policy decisions about the assessments and student achievement, they must base those decisions on empirical evidence, lest innuendo or unfounded perceptions sway education policy in the nation.

There was insufficient communication about the purposes and uses of testing. Understandably, the public had many questions about the purpose of the QSAS and, in particular, the QCEA and its implications for students in Qatar's schools. Yet, the SEC and the Evaluation Institute provided little public information to answer these questions. The QSAS communication effort can be improved by incorporating direct outreach efforts:

- Outreach programs for parents and other community stakeholders might be scheduled for weekends or weeknights, when working adults can attend meetings. (For Qataris, evening meetings would be the most appropriate option.)
- Outreach for education stakeholders should occur on a continuous basis throughout the early years of testing. (For Qatar, these stakeholders include Independent school operators, teachers, and Ministry of Education personnel.)

Furthermore, public acceptance of the assessment system could have been enhanced by improving the transparency of the testing operation. In other testing operations, this problem could be addressed early on by providing individual-level achievement data from the first year of testing. (For the QCEA, individual-level data were available only after the third year of testing.)

Challenges to Address in the Future

The QSAS is still in its nascent stages, and a number of challenges still exist for the Evaluation Institute:

- The standards for secondary school students are divided into foundation and advanced levels. The QCEA now tests foundation standards only. Future versions of the QCEA

will have to consider testing the advanced standards as more students start to learn those standards.

- Students with learning or developmental disabilities are not presently included in the testing operation but tend to be mainstreamed with traditional students in Qatar. To incorporate these students into the QSAS, the Evaluation Institute will need to develop testing accommodations for those with disabilities.
- At some point, the Education Institute will modify the Qatar curriculum standards. The Evaluation Institute needs to be prepared to make continuous appraisals of how well the QCEA aligns with the standards and make any adjustments to the test battery if changes to the standards occur.
- A number of the standards could be tested appropriately with the use of a computer. In its quest to assess student learning of the standards, the Evaluation Institute should explore how best to incorporate computer technology in the testing operation and whether computer-based delivery of assessments is feasible given the country's information technology infrastructure.
- Parents continue to have questions about the QSAS and, specifically, doubt whether it is necessary. To promote public acceptance, the Evaluation Institute will need to enhance communication with the public so that QCEA results can inform parental choice, school accountability, and educational policymaking. This should include reports of interest to practitioners and studies to test the validity of using QCEA results to inform school- or classroom-level educational decisions.
- Short- and long-term ramifications of a recent decision to limit the testing operation to students in the Independent schools will have to be carefully weighed against the goals and principles of the reform effort.