Qatar Education Study 2012

Curriculum Report

Social & Economic Survey Research Institute
(SESRI)

Qatar University
Doha, Qatar

May 2014

About the Social and Economic Survey Research Institute

This report was produced by the Social and Economic Survey Research Institute (SESRI). Established in 2008, the mandate of the Institute is to conduct survey research on issues related to the development and welfare of Qatari society, including social, economic, and cultural areas. To this end, SESRI aims to provide high quality data that may be used to guide policy formulation, priority setting, and evidence-based planning and research in the social and economic sectors. Equally important, the Institute strives to build capacity at Qatar University in survey research methodology by serving as a platform for QU faculty and students to conduct their own research. Along those lines, the Institute offers training in survey research related to topics of interest to the university community as well as to the Qatari society at large.

This report is a collaborative effort based on input and analysis from the following individuals:

Dr. Darwish Alemadi, LPI

Research Team:
Dr. Ahmed Al-Emadi
Dr. Abdoulaye Diop
Dr. Kien Trung Le
Dr. Linda Kimmel
Dr. Jill Wittrock
Sara Ali Zikri

Data Collection:
Elmogiera Elawad, Survey Operations Manager
Saleh Ibrahim Ali, Mohamed Agied, Survey Operations Assistants
Anis Miladi, Isam M. Abdelhameed, Ayman Al-Kahlout, Technology Specialists

Visit http://sesri.qu.edu.qa/ to see the online version of this report and summaries from current projects.

SESRI is responsible for any errors or omissions in this report. Questions may be directed to:

Social and Economic Survey Research Institute
Qatar University
New Library, 3rd Floor
P.O. Box 2713
Doha, Qatar
Phone: +974-4403-3020
Fax: +974-4403-3021
Email: sesri@qu.edu.qa
www.sesri.qu.edu.qa

Acknowledgements

This executive summary presents a selection of findings from the 2012 Qatar Education Study (QES) conducted by the Social and Economic Survey Research Institute (SESRI) at Qatar University. SESRI would like to extend appreciation and thanks to the following contributors and supporters:

- President Sheikha Abdulla Al-Misnad, Qatar University
- The Supreme Education Council
- Center for Political Studies, Institute for Social Research, University of Michigan

SESRI is grateful to the students, parents, teachers, and administrators who gave their valuable time to answer detailed questions on a variety of subjects important to education in the State of Qatar. We also thank the interviewers and supervisors who administered the fieldwork.

Table of Contents

Preface 5

Introduction 7

Curriculum Standards 10

Curriculum Content 14

Textbooks and other Teaching Materials 17

Tests and Evaluation 21

Conclusion 23

Appendix A: Survey Methodology 26

Preface

This report examines the views of teachers and administrators toward K-12 education in Qatar. It is based on results from the Qatar Education Study (QES), which is a series of surveys conducted by the Social and Economic Survey Research Institute (SESRI) in December 2012. Together, the surveys included more than 4,200 participants from 39 preparatory and secondary schools as detailed in the following table:

Table 1: Number of Schools and Participants in the Qatar Education Study

Total Number of surveyed schools	39 schools	
	Independent Schools 24 schools	Other Schools 15 schools
Total number of surveyed students	1,848 students	
	Independent Schools 1158 students (742 Qatari students)	Other Schools 690 students
Total number of surveyed parents	1,472 parents	
	Independent Schools 877 parents (514 Qatari parents)	Other Schools 595 parents
Total number of surveyed teachers	572 teachers	
	Independent Schools 384 teachers (77 Qatari teachers)	Other Schools 188 teachers
Total number of surveyed school administrators	318 administrators	
	Independent Schools 205 administrators (109 Qatari admin)	Other Schools 113 administrators

These surveys help capture attitudes on a number of issues pertaining to schools in Qatar from current participants in preparatory and secondary education. The schools in the sample represent a cross-section of the major school types (e.g., Independent, private) and coeducational and single-gender programs. The design of the QES allows for comparison within groups (e.g. all students in grade 8 or 9) and makes it possible to examine an issue from the combined perspective of students, parents, and educators. Examining the attitudes of all members of the education system will assist in the development of future plans for education in Qatar.

Collecting and analyzing these data is a considerable undertaking, requiring SESRI to publish the results in stages. This report presents findings in four areas related to curriculum:

- **Curriculum standards:** Teachers and administrators give qualified support for the curriculum standards and administrators have less confidence than teachers that teachers adequately understand the standards.
- **Curriculum content:** Teachers are more satisfied with curriculum content than administrators, but the satisfaction varies substantially across the Independent schools.
- **Textbooks and other teaching materials:** Teachers are not enthusiastic about the textbooks available for their courses and rely heavily on materials they prepare themselves.
- **Student assessment and evaluation:** While teachers and administrators do not feel that the national tests are a burden for teachers, they do question the utility of these assessments.

Introduction

The leadership of Qatar is greatly invested in its K-12 education because it views education as the key to the nation's economic and social progress. To this end, the Father Emir, His Highness Sheikh Hamad Bin Khalifa Al-Thani, announced a sweeping education reform in 2002 – Education for a New Era (EFNE) – to enhance educational quality and renewed this commitment in 2013 with a 360 billion riyal health and education fund.[1] His Highness Sheik Tamim bin Hamad Al Thani has continued this priority because he recognizes the value of a highly trained and educated population. Although Qatar has had a fairly developed education system before 2002, it was not enough to fully meet the demands of the economic, social, and cultural changes underway in the country, not to mention the challenges of a global economy. To transform Qatar into a diversified and advanced knowledge economy, the leadership prioritized a complete overhaul of the public school system with a particular emphasis on curriculum standards and content.

Following quickly after the 2002 announcement, the Supreme Education Council (SEC) opened the first cohort of independent schools in 2004[2]. Each fall thereafter another cohort of independent schools was opened until in September 2010 Qatar achieved the goal of converting all Ministry schools to Independent schools. These Independent schools are given a fair amount of autonomy in teaching methods and are encouraged to be innovative to meet the needs of their students; but this innovation must be set within the framework of the new national curriculum standards[3].

Education reform is only as good as the curriculum standards that are established. An education system can have world-class facilities and an abundance of extracurricular activities, but if the curriculum standards are low the students will not achieve at levels required to take a place in the knowledge economy. National curriculum standards are at the center of educational reform in Qatar. Internationally benchmarked standards have been set for each grade level from Kindergarten through grade 12 for Arabic, English, mathematics, and science. For instance, by grade 12 students in the independent schools should be able to manipulate algebraic expressions such as dividing a polynomial by a quadratic expression.[4] All these standards are consistent with the goals established for Qatar's future[5].

In 2008, following years of comprehensive planning and analysis, the state of Qatar articulated long-term national goals and values in the *Qatar National Vision 2030* (QNV 2030)[6], which sets the framework for growth and development, mainly through advanced, high quality educational and training services. In fulfillment of this mission, the QNV 2030 "aims to build a modern world-class educational system that provides students with a first-rate education, comparable to that offered anywhere in the world."[7] The *Qatar National Development Strategy 2011-2016* (NDS)[8] outlines the targets for achieving the goals in the QNV 2030, and the *Education and Training Sector Strategy 2011-2016* (ETSS)[9] of the Supreme Education Council (SEC) identifies the measureable outcomes and projects to prepare citizens for the future. The curriculum standards set for Qatar are designed to help students meet the national goals outlined in the QNV and the NDS.

The ultimate aim of any educational reform is to enhance student outcomes in such areas as academic achievement and educational aspirations. The NDS notes that one of the key challenges facing Qatar's education system is "the underachievement of Qatari students in math, science and English language at all levels" (p. 124). The recent release of the 2012 PISA scores, eight years after the introduction of the first Independent schools in Qatar, provides a mixed assessment of Qatar education[10]. While the average mathematics, reading, and science scores of 15-year old Qatari students remain below average when compared to students from around the world, Qatar was one of the only nations in which students improved in all three subject areas from 2006[11]. It is important to note that the PISA tests, while attracting world-wide attention, are not directly linked to the actual curriculum standards or curriculum in place in any given nation, including the standards established in Qatar[12].

With the full establishment of Independent schools in Qatar and the publication of curriculum standards in essential academic areas, key local stakeholders, including administrators and teachers, are critical to the successful implementation of education reform at the local school level[13]. In 2011 the NDS raised concerns that teachers were overwhelmed by the reform and noted that "The concurrent implementation of curriculum standards that need to be detailed by teachers, a student-centred teaching approach and the use of English as the instructional language may be burdening teachers with so many new responsibilities that classroom learning has suffered" (NDS, p. 132). If teachers and administrators feel overwhelmed, do not understand or support the curriculum standards, or are dissatisfied with the curriculum content and teaching materials, successful implementation of the reform is unlikely.

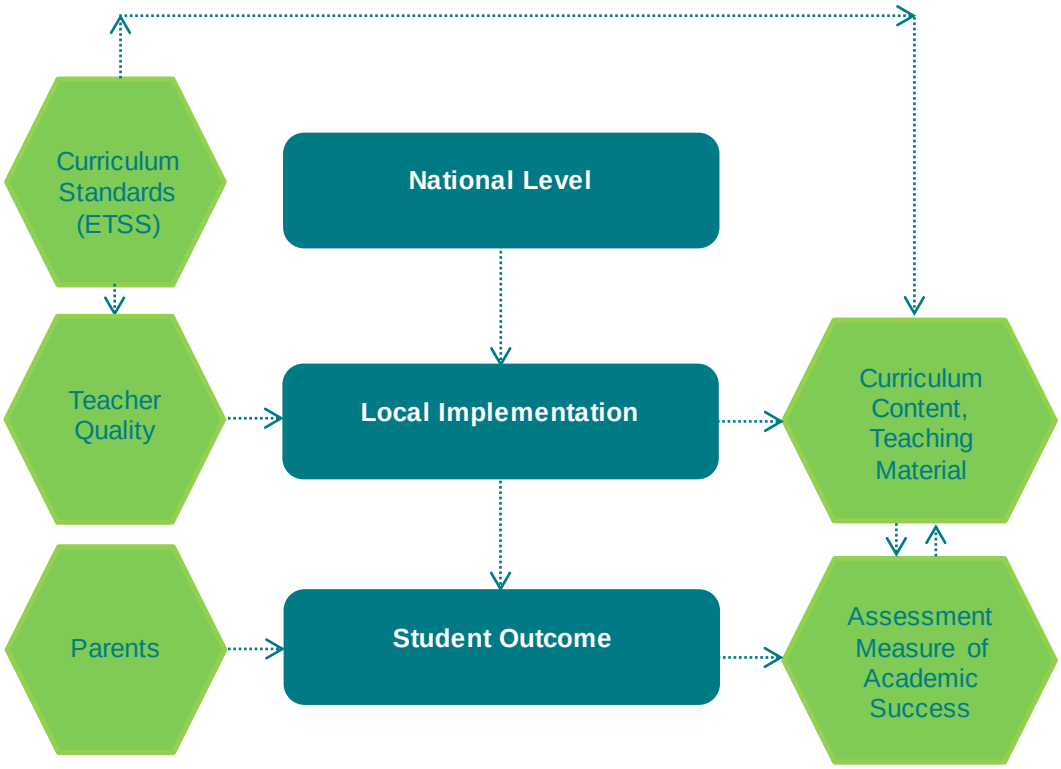
The Qatar Education Survey (QES) provides a resource for policymakers with a variety of topics pertaining to how students, parents, teachers, and administrators view the current education system. For this report we use information from the teacher and administrator [14] questionnaires regarding four policy-relevant areas related to the implementation of the national curriculum standards at the local level:

- Curriculum standards
- Curriculum content
- Textbooks and other teaching materials
- Student assessment and evaluation

Because the national standards apply only to the Independent Schools in Qatar, in this report we only use the data collected from teachers and administrators in the Independent Schools.

Curriculum standards, curriculum content, textbooks and other teaching materials, and student assessment are intricately linked (see Figure 1). The curriculum and materials used by teachers are intended to operationalize the curriculum standards; as such they logically follow after curriculum standards in our discussion. Formalized student assessment reveals whether the students have attained the knowledge prescribed in the standards. We focus on the results of the teacher and administrator questionnaires to understand their beliefs about the state of education in Qatar.

Figure 1. The Path to Student Academic Success



Because the success of education reform rests on local implementation, we look not only at overall teacher and administrator views, but at differences between schools. For example, do Independent school teachers and administrators react uniformly regarding the implementation of curriculum standards, or are there some schools in which problems appear?

Finally, for a massive national educational reform to succeed, local teachers and administrators must be enthusiastic – and able – supporters of the initiative. They must believe strongly that such things as the curriculum standards and national tests are valid, and they must be knowledgeable about the best methods to implement the standards at the local level[15]. For this reason, we focus on strong levels of support – rather than lukewarm levels of support – by teachers and administrators in the following sections.

Curriculum Standards

A major component of education reform in Qatar was the establishment of curriculum standards for critical academic subjects at each grade level[16]. The curriculum standards "spell out what knowledge and skills students should acquire at each K-12 education level and ensure that students receive an education that reflects the advanced standards used in other countries."[17] The curriculum standards are also intended "to help each Independent School to plan its curriculum, to guide writers of teaching and learning materials, and to inform the design of tests and examinations." [18]

Previous reports reveal some problems in the implementation of curriculum standards in Qatar at the local level. The NDS notes that the curriculum standards, "constituted a challenge for teachers and students, especially when accompanied by other changes, such as adopting English as the language of instruction and introducing a student-centered approach to teaching."[19] The QES allows us to examine teacher and administrator attitudes toward and actions regarding the curriculum standards, nearly two years after the NDS was issued.

While teachers and administrators express little dissatisfaction with the curriculum standards in the QES, their satisfaction is qualified. Only 37 percent of the teachers and 22 percent of the administrators are "very satisfied," with the curriculum standards, while another 57 percent of teachers and 67 percent of administrators are "somewhat satisfied" with the curriculum standards (see Figure 2). There is substantial variation in satisfaction with the curriculum standards across the Independent schools. The percent of administrators in a school who are very satisfied with the curriculum standards ranges from none to 71 percent. As with the administrators, teacher satisfaction varies by school from a low of eight percent of teachers being very satisfied in one school to a high of 69 percent of the teachers in another school. Overall there is only a weak relationship between the percentage of teachers and administrators satisfied or very satisfied with the curriculum standards within schools (correlation = .39).

There is considerable variation in teacher satisfaction with curriculum standards based on the subject and level that they teach (see Figure 3). Among preparatory teachers, the percent of teachers very satisfied with curriculum standards ranges from a low of 25 percent of Islamic studies teachers to a high of 50 percent of science teachers. In comparison, only 12 percent of the secondary mathematics teachers are very satisfied with the standards while 53 percent of social studies teachers are very satisfied.

If the curriculum standards are to be successfully implemented in the classroom, teachers must thoroughly understand the standards. Despite some reservations about curriculum standards, nearly half of the teachers (49 percent) feel that their fellow teachers know the curriculum standards for their subject to a "great extent" and another 44 percent feel teachers know the standards to "some extent." Administrators express slightly less confidence in teachers' knowledge of the standards. Just over one-third of the administrators feel teachers know the standards to a "great extent" and an additional 54 percent feel they know the standards to "some extent."

Administrators' beliefs that teachers know the curriculum standards to a great extent varies by school from none of the administrators believing the teachers know the curriculum standards to a great extent to 86 percent of the administrators believing the teachers know the standards to a great extent. An examination of teacher and administrators' beliefs about the level of teachers' knowledge about curriculum standards within the same schools reveals little congruence (correlation = .07). There is a general tendency for a greater percentage of teachers in a school than administrators to believe that teachers know the curriculum standards to a "great extent." However, the difference between the percent of teachers and administrators believing teachers know the standards to "a great extent" ranges from -30 (56 percent of teachers and 86 percent of administrators) to +58 (58 percent of teachers and 0 percent of administrators). Clearly there is a difference between teachers and administrators beliefs about teachers' understanding of the curriculum standards, signaling potential problems for the consistent implementation of the curriculum standards within some Independent schools.

Since administrators have some doubts about teachers' knowledge of curriculum standards, do they regularly review the standards with teachers in their school? And by extension, do administrators regularly discuss the standards with their students' parents, emphasizing the importance of the standards to their child's educational success? It is difficult to know what a reasonable number of discussions about standards might be. With parents, perhaps once a semester is adequate. With teachers, three or more times may be more reasonable.

Subject coordinators report the most frequent discussions with teachers, with 91 percent discussing curriculum standards three or more times a semester (see Figure 4). Two-thirds of academic advisors and just over half of principals/license owners discuss standards with teachers three or more times a semester. In contrast, 85 percent of academic advisors discuss curriculum standards with parents at least once a semester, compared to just over 50 percent of subject coordinators and principals/license owners.

Figure 2: Administrator and Teacher Attitudes toward Curriculum Standards

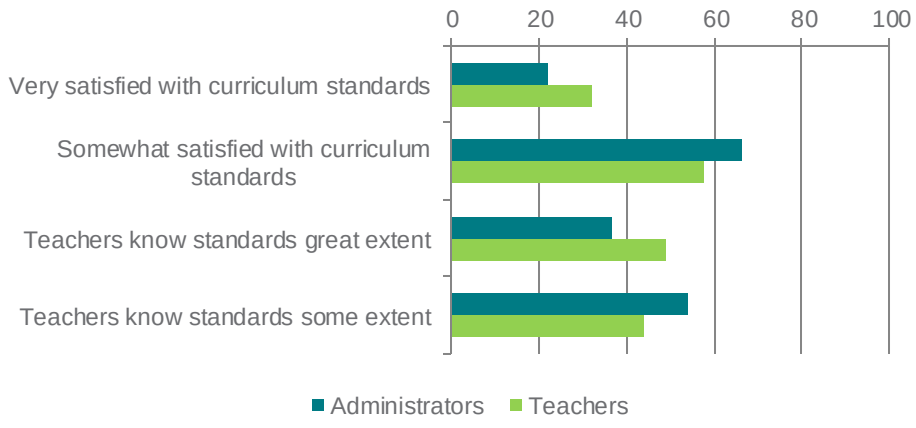


Figure 3: Percent of Teachers Very Satisfied with Curriculum Standards by Subject and Level Taught.

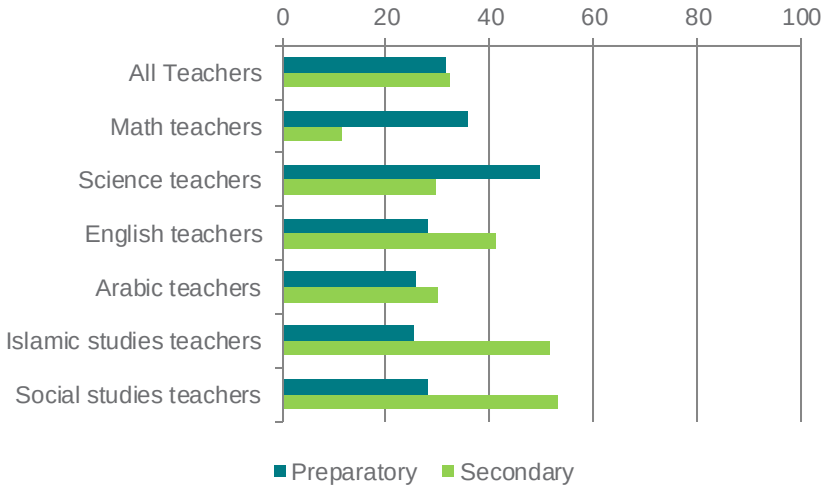
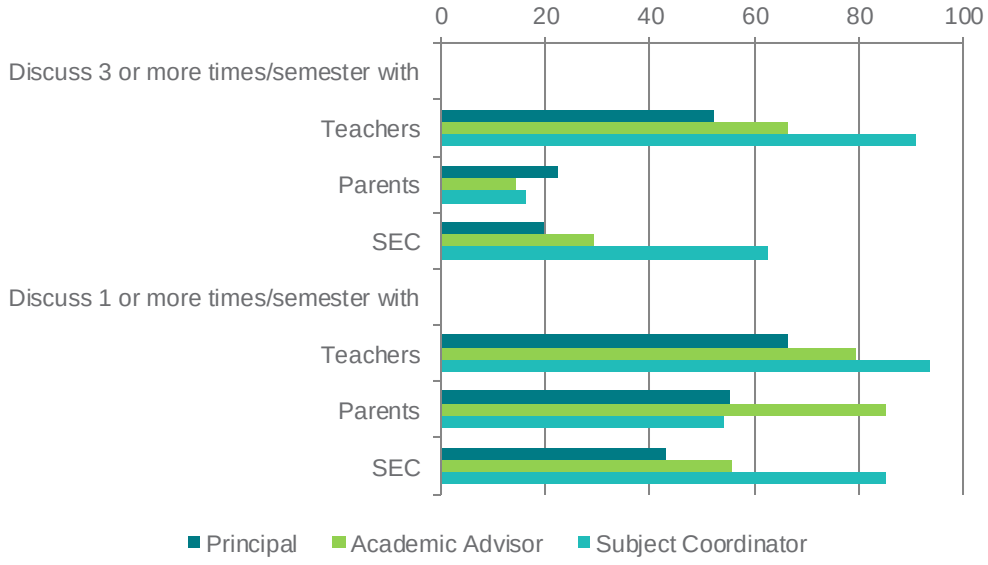


Figure 4: Independent School Administrator Discussions about Curriculum Standards Each Semester



Summary for curriculum standards: We have seen that teachers and administrators have only qualified satisfaction with the curriculum standards, and that this satisfaction varies substantially across the Independent schools. Additionally, we have found that administrators have less confidence in teachers' knowledge of the standards than do the teachers themselves. In the following section we will examine teachers and administrators' attitudes toward their implementation of the standards – through curriculum content – in their schools.

Curriculum Content

The curriculum standards established by the SEC provide the goals for teachers to follow in developing lesson plans and materials appropriate to the grade and subject they teach. In essence, the curriculum content is the local implementation of the nationwide curriculum standards. The QES includes a series of questions for both administrators and teachers assessing their attitudes toward curriculum content.

Overall, twice as many teachers (34 percent) as administrators (17 percent) are very satisfied with the curriculum content (see Figure 5). There is considerable variation in teacher satisfaction with curriculum content between schools, ranging from schools in which only 20 percent of the teachers are very satisfied with curriculum content to those in which half the teachers are very satisfied. The percent of administrators very satisfied with curriculum content ranges from a low of none of the administrators in a school (10 schools) to 57 percent of the administrators. There is virtually no relationship between teacher and administrator satisfaction with curriculum content within schools (correlation = .01). For example, in the two schools with the highest percent of teachers who are very satisfied with curriculum content (50 percent) only 14 percent of the administrators are very satisfied. Conversely, in the two schools in which 57 percent of the administrators are very satisfied, 20 percent of the teachers in one school and 35 percent in another school are very satisfied with curriculum content. Clearly there is not a homogenous environment within the schools with regard to curriculum content.

We found only minimal differences in satisfaction with curriculum content based on administrative position. However, there appear to be some differences in teacher satisfaction based on the level and subject that they teach (see Figure 6). The percent of secondary teachers very satisfied with curriculum content ranges from just 10 percent of mathematics teachers to 49 percent of Islamic studies teachers; among preparatory teachers satisfaction ranges from a low of 31 percent of Islamic teachers to a high of 45 percent of mathematics and English teachers. While only approximately 10 percent of both administrators and teachers believe that the curriculum is an obstacle to a good education to a great extent, nearly 40 percent of administrators and 26 percent of teachers believe that the curriculum is an obstacle to some extent.

Figure 5: Teachers and Administrators and Curriculum Content.

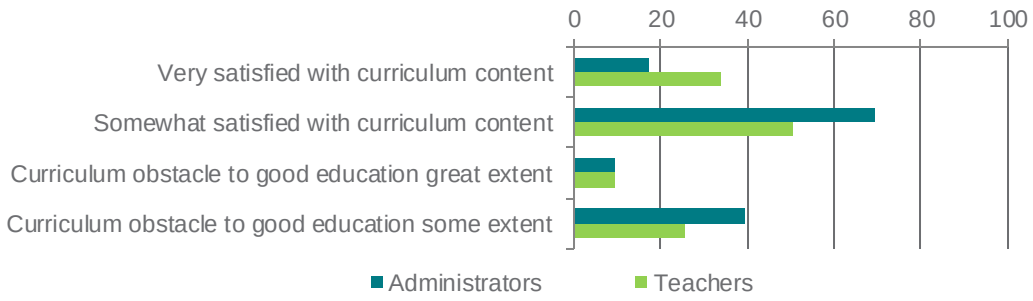
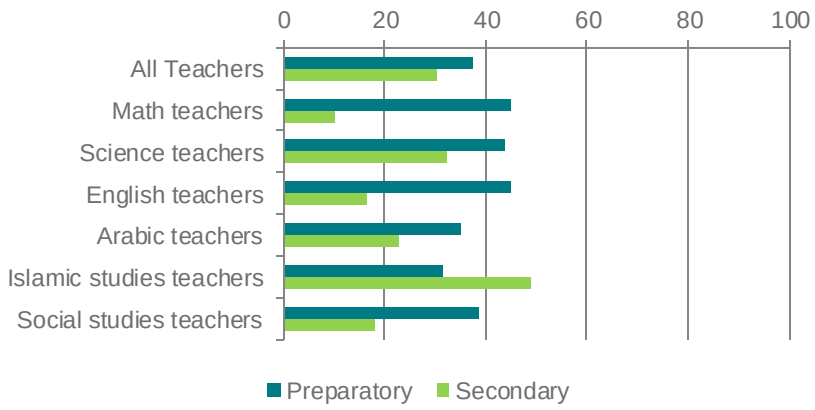


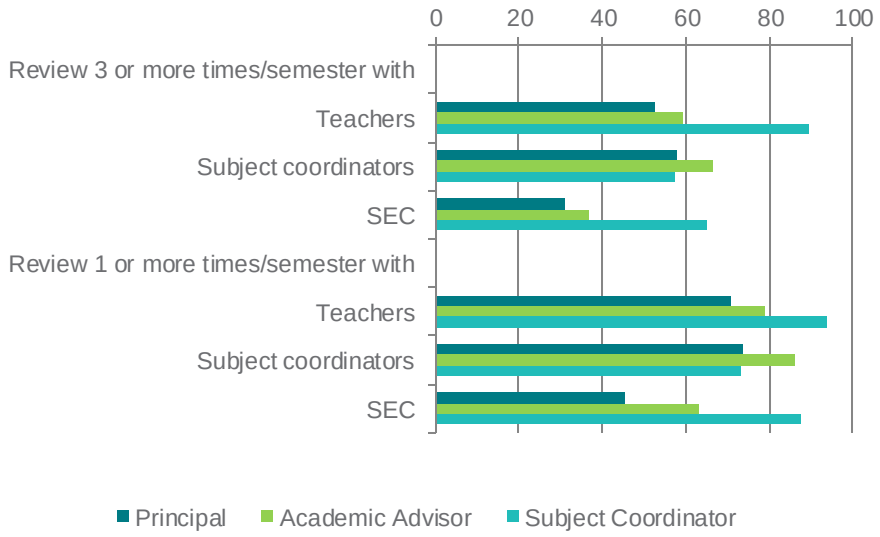
Figure 6: Percent Teachers Very Satisfied with Curriculum Content by Level and Subject.



Given their qualified satisfaction with curriculum content, do administrators review the content with teachers on a regular basis? Administrators' reports of their review of curriculum content with teachers are very similar to their reviews of curriculum standards. Once again, subject coordinators report the highest levels of reviews with teachers, with 90 percent reviewing content three or more times a semester with teachers, in comparison to 60 percent of academic advisors and 52 percent of principals (see Figure 7).

It is important to remember that the curriculum taught by teachers is the tool for ensuring that the nationally set standards are met by students. Independent schools – and by extension the teachers – are empowered to develop lesson plans and materials to teach the curriculum. Does a lack of enthusiasm for the curriculum content mean that teachers are dissatisfied with the standards, or merely with the way the standards are implemented in their school? While we cannot know for sure, there is a strong relationship between the teachers' level of satisfaction with the curriculum standards and their satisfaction with the curriculum content[20] . For example, 60 percent of the teachers who are very satisfied with the curriculum standards are also very satisfied with the curriculum content, while another 37 percent are somewhat satisfied. In contrast, only 15 percent of the teachers who are very dissatisfied with the curriculum standards are very satisfied with the curriculum content.

Figure 7: Administrator review of curriculum content each semester by position.



Summary for curriculum content: We have found that teachers are more satisfied with curriculum content than administrators, with considerable variation for both across the schools. In the following section we will see how this relates to the teachers' attitudes toward the textbooks and teaching materials that they use to convey the curriculum content to their students.

Textbooks and other Teaching Materials

The use of textbooks has evolved during the period of educational reform in Qatar. Initially there was a high level of local autonomy with the Independent schools empowered to develop their own teaching materials to meet the needs of their students in order to achieve the national curriculum standards. Instead of nationally-mandated textbooks the Independent schools could select their own textbooks or teachers could eliminate textbooks completely and prepare their own materials. Howard and Major (2005) note that teacher-produced materials can enhance student learning by allowing teachers to take into account such factors as their own learning environment and the individual needs of their students[21].

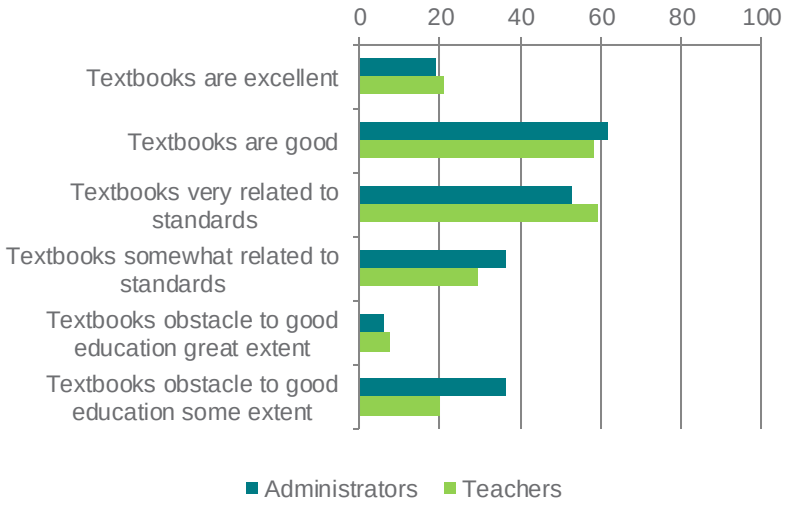
There is an inherent tension between teacher autonomy and the need for accountability for student performance in most national education systems[22]. Under EFNE even when teachers had a high degree of autonomy for preparing their own materials, they were still held accountable for their students learning the curriculum standards. This early level of individuality and autonomy has changed over the subsequent years. Partially as a result of complaints from parents about the inferior quality of teacher-prepared materials, the SEC gradually increased the role of textbooks[23]. It should be noted that criticisms about the quality of teacher-prepared materials are not unique to Qatar. Howard and Major find that the major criticism levied against teacher-produced materials is the quality of the materials, noting that "They may contain errors, be poorly constructed, lack clarity in layout and print and lack durability." (p. 103)[24]. Currently, a list of textbooks is approved by the SEC based on subject and grade level[25]. However, these texts do not cover all of the material in the curriculum standards and teachers are encouraged to develop and provide supplemental materials to ensure that their lessons cover all aspects of the curriculum so that their students will meet the grade-level curriculum standards.

Teacher and administrator ratings of the textbooks selected by the SEC are less than enthusiastic, with approximately 20 percent of both groups rating the textbooks as excellent (see Figure 8). There is some variance in teacher ratings of textbooks based on subject and grade level taught. Approximately three times as many preparatory mathematics and science teachers rate their textbooks as excellent as do English and social studies teachers at the same level (see Figure 9). At the secondary level, over twice as many Islamic studies teachers rate their textbooks as excellent in comparison to mathematics and English teachers at the same level. Setting aside the issue of the subject taught, we might ask if there is a general sense of dissatisfaction with textbooks within a school. In no school did all of the teachers rate the textbooks as fair or poor, but the percent assigning these low ratings ranges from 7 percent (two schools) to 46 percent (one school).

Particularly troubling is the finding that only 53 percent of administrators and 59 percent of teachers believe that the textbooks are "very related" to the curriculum standards established for the disciplines, which is problematic if students are tested on and are expected to meet the standards. However, despite these reservations, less than

10 percent of both teachers and administrators believe that the textbooks are an obstacle to good education in Qatar to a "great extent."

Figure 8: Administrator and Teacher Attitudes toward Textbooks



It is clear that nearly all of the Independent school teachers routinely prepare teaching materials to supplement textbooks (see Figure 10) and rarely or never use teaching materials prepared by outside sources (such as publishing companies). Given past concerns with the quality of teacher-prepared materials, the latter may be problematic, and may explain why the SEC has taken steps to have more supplemental teaching materials prepared by outside sources[26].

Some early evaluations of the Independent schools stressed the increased collaboration apparent in the Independent schools in contrast to the old Ministry schools. As such, collaborating with other teachers to prepare teaching materials would exemplify this trend, and 94 percent of the teachers at least sometimes collaborate with other teachers in their school to prepare teaching materials. However, if teachers are ill-prepared to develop their own materials, this collaboration is not necessarily a positive sign.

Figure 9: Percent of Teachers Rating Textbooks as Excellent by Subject and Level Taught.

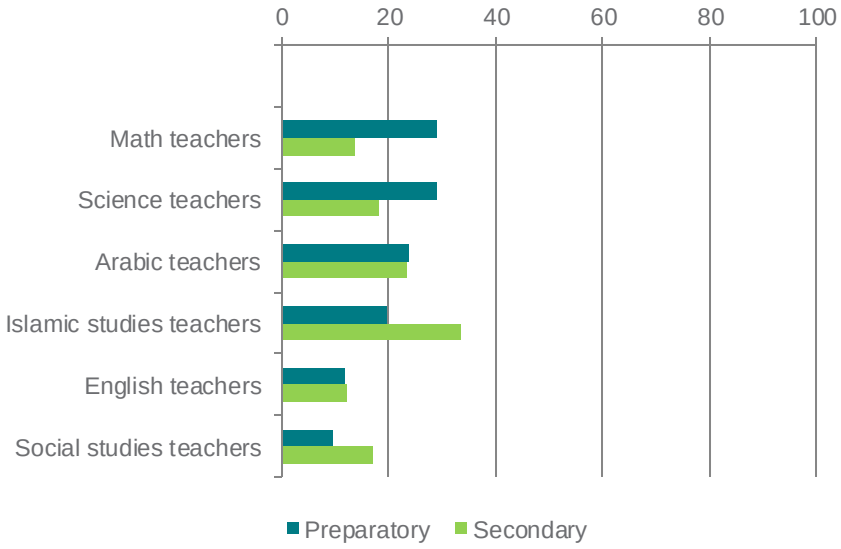
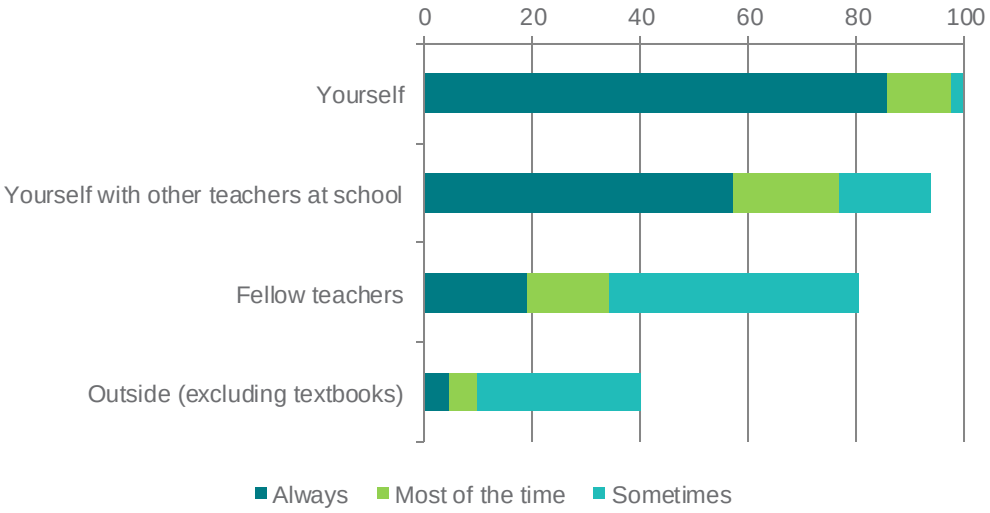


Figure 10: Independent School Teacher use of materials other than textbooks



Moving forward, the E-Learning project of the SEC will make curricular materials directly accessible to Independent school students through the distribution of tablet computers. A late 2012 announcement about the launch of the E-Learning Portal communication and electronic library indicated that the SEC intends to "begin to implement interactive e-book project, which will replace the textbook during the five-year plan for the implementation of e-learning projects."[27] The E-Learning project will need to be carefully monitored. Books, whether in print or digital format, still require the students to have adequate reading levels to be able to digest the material presented.

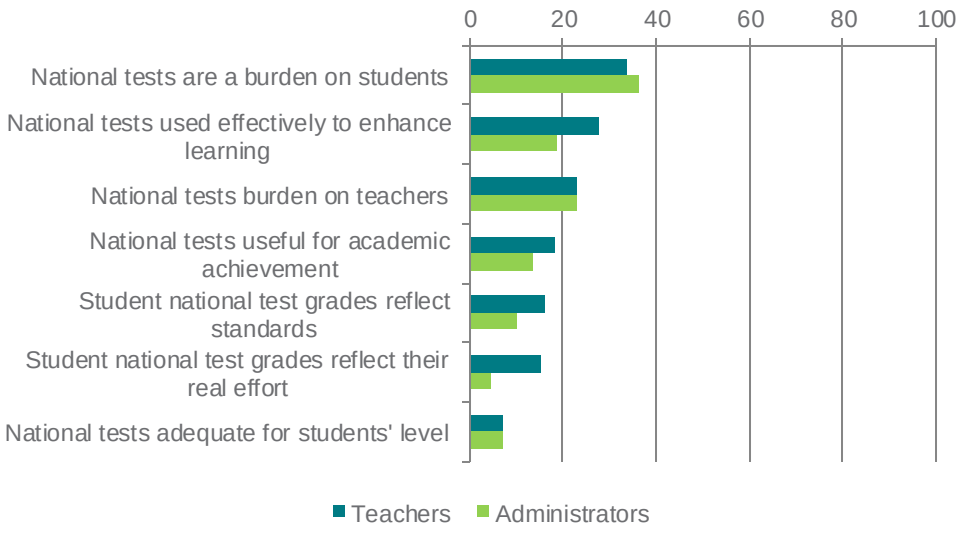
Summary for textbooks and other teaching materials: Textbooks and other teaching materials convey the curriculum content to students. We have seen here that teachers are not enthusiastic in their ratings of textbooks, and rely heavily on materials that they prepare themselves. The whole area of textbooks and associated teaching materials has undergone considerable change over the course of Qatar education reform and continues to the present. It will be critical to monitor teacher and student use of, and satisfaction with, the e-learning project and its associated materials.

Tests and Evaluation

Regular assessment was included as an integral part of Qatar's ENF. The NDS notes that "to share accountability, a transparent assessment system – the annual Qatar Comprehensive Evaluation Assessment for independent school students – holds all school leaders, teachers and parents accountable for the success of students." The Student Assessment Office is responsible for designing and implementing the Qatar Comprehensive Educational Assessment (QCEA), a program that measures student learning. This program administers standardized tests to students in the independent schools in Qatar. Testing is done annually, with the first tests occurring in April and May 2004 to establish a baseline from which to compare all future test results" (SEC website)[28].

While only a third of teachers and administrators feel strongly that the national tests are a burden on students and approximately one-quarter feel they burden teachers, both administrators and teachers have doubts about the usefulness and validity of the national tests (see Figure 11)[29]. Only 15 percent of teachers and 5 percent of administrators feel strongly that the national tests reflect the students' real efforts, and less than 10 percent of both teachers and administrators feel strongly that the national tests are adequate for the students' level [30].

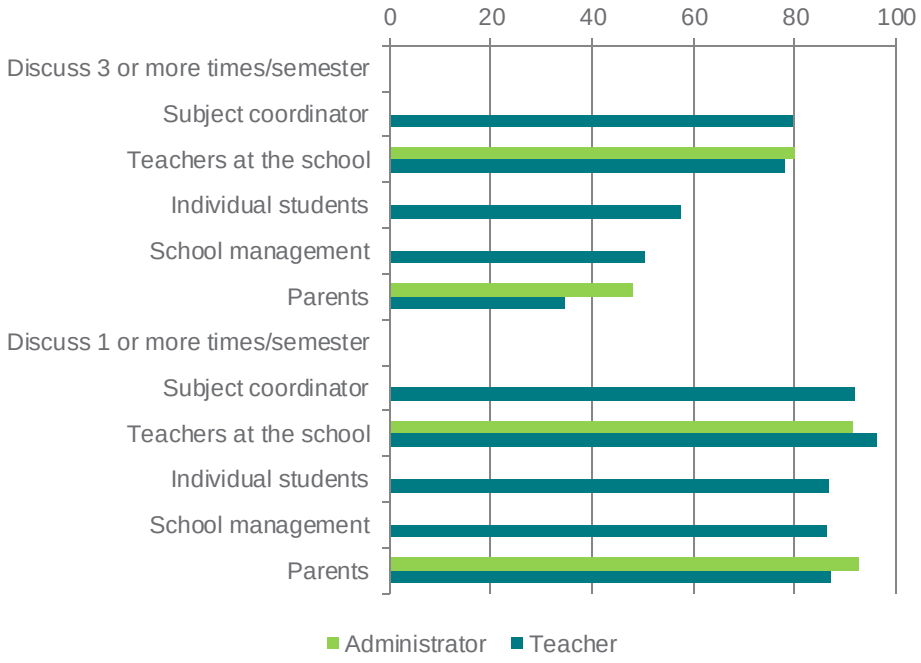
Figure 11: Teacher and Administrator Attitudes toward National Tests.



Given the critical role of student assessment within Qatar's educational reform, we would expect to see a high level of discussion between key stakeholders about the assessments. Approximately 80 percent of teachers discuss assessment with subject coordinators three or more times a semester and another 12 percent have these

discussions at least once a semester; nearly as many teachers report having discussions about assessment with other teachers at their school (see Figure 12). However, only 58 percent of teachers report discussing assessment with students at least three times a semester and another 29 percent have discussions with students at least once a semester. Over 80 percent of both administrators and teachers discuss assessment with parents at least once a semester.

Figure 12: Teacher and Administrator Discussions of Student Assessment



Summary for tests and evaluation: While most teachers and administrators do not feel that the national assessments are a burden on teachers or students, they question the usefulness of these assessments. In our final section we pull together the results from this and the preceding sections and make suggestions for future evaluations of the Qatar educational system.

Conclusion

The QES provides important insights into the attitudes of teachers and administrators toward crucial curriculum-related matters as of late 2012. The QES occurred ten years after *Education for a New Era* was introduced, and two years after the Independent schools were fully realized in Qatar, serving as an important time period for an early evaluation of education reform. The 2011-12 Annual Report of the Evaluation Institute of the SEC, which makes use of the Qatar Comprehensive School Surveys and various administrative data, provides an additional portrait of the Qatar schools at nearly the same time[31]. Both of these sources provide important information about the current state of schools in Qatar. However, while the Evaluation Institute's Annual Report includes over 100 figures and tables depicting various aspects of the educational system, it does not describe teacher evaluations of curriculum standards or curriculum content.

It is important to remember that the QES – as with any one-time study of a sampling of schools – provides us with information at a single point in time. We have found little outright opposition or dissatisfaction among administrators and teachers regarding the curriculum standards, curriculum content, textbooks, and national tests. However, their satisfaction with and support of these curricular matters is qualified and tepid. Will these same teachers and administrators at these same schools be more satisfied and feel more confident about the curriculum content and standards in the future, especially as the Qatari education system continues to be revised through such features as the introduction of the E-Learning project? And what impact will continued levels of indifference have on student achievement?

Likewise, international data sets such as PISA are a series of cross-sectional – or one-time -- studies collected over time. While we can see that the average scores of Qatar 15-year olds have increased significantly over the recent PISA administrations, we do not know how the same students have fared over time. Have the 15-year olds who participated in PISA in 2006 continued to improve as they advanced in school, and will the 15-year olds who participated in 2012 continue to improve as the Qatar education system evolves? We cannot answer these questions from cross-sectional studies. In a similar manner, while the Evaluation Institute's Annual Report provides some system-wide comparisons across school years of such factors as standard test scores in various subjects, it provides no linkages of the effect of various school-level factors (such as teachers who are dissatisfied with curriculum standards and content) on student outcome measures in subsequent years. Are the high performing PISA students going on to university? Are they more likely to specialize in a knowledge economy field? What are the fates of the low performing PISA students? Without the benefit of a study tracking the same cohort of students via a longitudinal study, the 2002 education reforms cannot be definitively evaluated using either the SEC public data or the QES study. We believe it is also critical that a neutral authority, such as SESRI, collect this data. If administrators send questionnaires to the SEC, they may be less likely to report problems in the curriculum standards and teaching materials. An impartial organization collecting the data signals to teachers and administrators that they can disclose concerns in the implementation of EFNE standards without fear of recrimination or reprisal from central

government authorities. This will ensure more honest and accurate responses and help the SEC identify problems much earlier in the process.

Education reform in Qatar continues to evolve, and to capture the full process and its impact on individual students and teachers, a longitudinal study is needed in which the same students, teachers, and administrators at the same schools are revisited over the years. Such a design will allow us to see the long-term impact of key school-level factors on critical student outcome measures such as educational plans, career objectives, and academic achievement.

Longitudinal studies ask the same individuals – or panel -- to complete surveys and/or academic achievement tests repeatedly, over some period of time. Each survey or test that the panel is asked to complete generally includes some of the same questions allowing for the measurement of change in attitudes, behaviors, and knowledge over time at the individual level.

We have talked about some of the major changes introduced by EFNE that are related to curriculum in this report. It is critical that the effect of these changes, as well as their differential implementation at the local school level, be monitored. For example, do students whose 9th, 10th, and 11th grade mathematics teachers are more knowledgeable about the curriculum standards perform better on their 12th grade mathematics evaluation tests? Are these students more likely to want to major in mathematics in college than students whose 9th, 10th, and 11th grade teachers are less knowledgeable about the mathematics standards? And do the students whose teachers are more knowledgeable also come from homes with more abundant learning resources than the students with less knowledgeable teachers? What is the long term effect of the introduction of tablets and curricular materials through the E-Learning Project? Are the students who use their tablet the most in 7th grade the students with the highest reading scores in 6th grade? Or do students with low reading ability in the 6th grade make more use of their tablets in the 7th grade, and experience a significant increase in their reading ability by the 8th grade. We can only answer such critical policy-relevant questions through the use of a longitudinal study. Cross-sectional studies hint at the relationship between factors but cannot establish the time order of events. More importantly, cross-sectional studies do not allow us to follow the same students throughout their school years and take into account differences in their home and differences in the implemented curriculum that they experience.

In contrast to a generation ago, primary and secondary schooling in Qatar is now universal and literacy rates for children are near 100 percent. Students in Independent schools continue to improve their scores on international assessments, namely PISA, and the government continues to make substantial investments to modernize the entire education system, as demonstrated by the E-Learning program. Yet there is evidence that the education performance of Qatari students is not progressing at a rate commensurate to their international peers, despite a decade of reforms. As readily acknowledged by government authorities, “Qatar will not be able to improve significantly its relative standing in relation to other countries…without significant improvements in education performance. Nor will the huge potential for Qatari youth to play a more

prominent role in Qatar's development be realized without their attaining relevant education qualifications…" [32] The national curriculum standards, curriculum content, textbook and teaching materials, and student assessments are indispensable pieces to elevating performance, but as highlighted in this report, without the support of teachers and administrators, it will be difficult for Qatar to meet the goals outlined in the QNS, no matter the amount of resources invested in the education system. Juxtaposed with the need for teacher support, a longitudinal study is recommended to measure change as a result of the reforms. Armed with this information, policymakers and educators can more accurately evaluate the success of the EFNE as well as provide course corrections when it becomes clear a standard is underperforming.

Appendix A: Survey Methodology

Results from the Qatar Education Study (QES) come from four surveys administered under the direction of the Survey Operations Division at the Social and Economic Survey Research Institute (SESRI). The surveys were sent to central stakeholders in grade 8,9,11 and 12: students, parents, teachers, and administrators. Feedback from these stakeholders is critical to evaluating whether the reforms implemented in fulfillment of the targets outlined in the Qatar National Development Strategy 2011-2016 (NDS) are succeeding, and if not, which reforms may need reevaluation and additional support from the Supreme Education Council (SEC). This survey design is especially appropriate because it paints a clear picture of the participants' school experience.

Sample design

Sampling is the process of selecting those individuals from a population to estimate characteristics of the whole population. It plays a critical part in any school survey since the ability to make valid inferences to the population, which is the target of the investigation, relies upon a rigorous sample design. In the following, we discuss issues related to the sampling design used in the QES.

Students were the target population for the survey sampling. The sampling frame, which is a list of all those individuals in a population who can be selected, was developed by SESRI based on a comprehensive list of all public and private schools in Qatar which was provided by the Supreme Council of Education. In this frame, all schools are listed with information about school names, address, school gender (boy, girl, or coed), system (independent, international, private, or other type of schools), and the number of students in grade 8, 9, 11, and 12.

Based on the information about the school size, school system, gender and grade, we divided the sampling frame into several subpopulations (i.e., stratum). This stratification divided members of the population into subgroups that are relatively homogenous before sampling begins. We tried to ensure that every member of the population had the same probability of being selected (i.e., self-weighting) so proportionate sampling was used to make the proportion of students in each stratum similar between the frame and the sample. That means the number of sampled schools needed to be proportionate to the number of respondents across strata in the frame (assuming that the same number of students was selected from each school).

Inside each stratum, students were randomly selected following a two-stage sampling process which is probably the most commonly used sample design in educational research (UNESCO International Institute for Educational Planning 2009). In the first stage, the school was selected with probability proportionate to its size (i.e., PPS). This gives an equal chance of selection for students while allowing for a similar number of students to be chosen from each school for each strata. In the second stage, for ease of the field work, we randomly selected one class for each grade in the school and all students in the class were included in the survey.

In the student study, students in grades 11 and 12 in the secondary schools and students in grades 8 and 9 in the preparatory schools were selected. For the parent study, the parents of the students selected in the student study were sent questionnaires. Lead teachers of the classrooms selected for the study were sent questionnaires as were the administrators for the school.

We account for the complex sampling design in the data analysis to ensure the unbiasedness and efficiency of the statistical estimates. Particularly, a weighting variable was created to take into account the selection probability and the non-response. Weighting is a mathematical correction used to give some respondents in a survey more influence than others in the data analysis. This is sometimes needed so that a sample better reflects the population under study. In the QES, the number of students in the selected class can be different across schools, and a weight is needed to adjust for this difference.

Sample size, non-response, and sampling error

The sample size of this survey is 43 schools. However, 4 schools refused our survey requests. For the remaining 39 surveyed schools, all students in the selected classes fully participated in the survey. In the final data, we have 1,848 students, 1,472 parents, 572 teachers, and 318 administrators from these 39 schools.

With the above number of completions, the maximum sampling error for a percentage is +/-2 percentage points for the student survey. The calculation of this sampling error take into account the design effects (i.e., the effects from weighting, stratification, and clustering). One possible interpretation of sampling errors is: if the survey is conducted 100 times using the exact same procedure, the sampling errors would include the "true value" in 95 out of the 100 surveys. Note that the sampling errors can be calculated in this survey since the sample is based on a sampling scheme with known probabilities. This feature of random sampling is an essential element that distinguishes probability samples from other sampling methods, such as quota sampling or convenient sampling.

Questionnaire development

The questions were designed in English and then translated into Arabic by professional translators. After the translation, the Arabic version was carefully checked by researchers at SESRI who are fluent in both English and Arabic. Next, the questionnaire was tested in a pre-test of four randomly selected schools. This pretest gave valuable information allowing us to refine question wording, response categories, introductions, transitions, interviewer instructions, and interview length. Based on this information, the final version of the questionnaire was created and then programmed for data entry purpose. The questionnaires were sent to stakeholders in December 2012. Parents of the students who received the student questionnaire were also sent the parent questionnaire to be completed at home. Data were collected from teachers and administrators through interviews conducted in their respective schools.

Survey Administration

Each interviewer participated in a training program covering fundamentals of school survey, interviewing techniques, and standards protocols for administering survey instruments. All interviewers practiced the questionnaire before going to the schools. In general, interviewers were expected to:

- Locate and enlist the cooperation of schools and students.
- Motivate teachers and students to do a good job.
- Clarify any confusion/concerns.
- Observe the quality of responses.

Data were collected from students and parents using paper questionnaires (Paper-and-Pencil Interviewing – PAPI). Teachers and administrators from the selected schools were interviewed by SESRI fieldworkers using Computer-Assisted Personal Interviewing (CAPI).

Data Management

After data collection was completed, interviewers manually entered responses from students and parents into Blaise, which is a computer-assisted interviewing system and survey processing tool. The responses were then merged into a single Blaise data file. This dataset was then cleaned, coded and saved in STATA formats for analysis. After weighting the final responses, the data were analyzed using STATA 12 and IBM SPSS 20, both of which are general purpose statistical software packages commonly used in the social sciences. Tables and graphs were generated in Microsoft Excel and Word.

ENDNOTES

[1] Most recent announcement available at Qatar Tribune: http://www.qatar-tribune.com/data/20130516/pdf/main.pdf

[2] A review of the history of education reform in Qatar can be found in: Sonja Ben Jaafar (2012). Leadership in Qatar's educational reform in Louise Volante (Ed) *School Leadership in the Context of Standards-Based Reform: International Perspectives*. London: Springer (pp. 229-246)

[3] Expanding the Capacities of Qatari Youth: Mainstreaming Young People in Development. Qatar's Third National Development Report (2012). General Secretariat for Development Planning, Doha, Qatar. http://planipolis.iiep.unesco.org/upload/Qatar/Qatar_HDR_2012_English.pdf

[4] For the mathematics standards, refer to: http://www.sec.gov.qa/Grade%20And%20Subject/Math-Grade%2012%20(advanced-mathematics%20for%20science).pdf

[5] The curriculum standards can be found by grade-level at http://www.sec.gov.qa/En/Education/Pages/GradeAndSubject.aspx.

[6] The *Qatar National Vision 2030 (QNV 2030)* is available at: http://www.gsdp.gov.qa/portal/page/portal/gsdp_en/qatar_national_vision/qnv_2030_document/QNV2030_English_v2.pdf

[7] Quoted from the General Secretariat for Development Planning 2008 and accessed at www.planning.gov.qa.

[8] The *Qatar National Development Strategy 2011-2016* (NDS) is available at: http://www.gsdp.gov.qa/gsdp_vision/docs/NDS_EN.pdf

[9] The *Education and Training Sector Strategy 2011-2016* (ETSS) of the SEC is available at: http://www.sec.gov.qa/en/about/documents/stratgy2012e.pdf

[10] OECD (2013). *PISA 2012 Results: What Students Know and Can DO – Student Performance in Mathematics, Reading, and Science* (Volume I), PISA, OECD Publishing. http://dx.doi.org/10.1787/9789264201118-en.

[11] While many focus on the absolute ranking of their nation in a given subject area on the PISA tests (such as being first in mathematics or tenth in science) analyses of PISA scores raises questions about the rankings. Kreiner and Christensen (2013) analyzed the 2006 data and report that their findings "do not support the claims that the country rankings reported by PISA are robust" (Svend Kreiner and Karl Bang Christensen (2013). Analyses of model fit and robustness: A new look at the PISA scaling model underlying ranking of countries according to reading literacy. *Psychometrika* DOI: 10.1007/S 11336-013-9347-Z.) An article in the *New Zealand Listener* interviewed Kreiner and he suggested that countries focus on change over time for their own nation's scores, rather than on the absolute rankings which are subject to considerable variation, and are frequently not significantly different (http://www.listener.co.nz/current-affairs/education/education-rankings-flawed/)

[12] In an early article about the 2000 PISA scores, Prais cautioned that the PISA tests are "directed to so-called 'everyday life' problems – which provides less guidance for policy on schooling." (p. 139). S.J. Prais (2003). Cautions on OECD's recent educational survey (PISA). *Oxford Review of Education*, 29(2): 139-163.

[13] Three recent recent articles emphasize the critical nature of principals and teachers at this stage of education reform in Qatar: (1) Michael H. Romanowski, Maha Ellili Cherif, Badria Al Ammar, and Asma Al Attiyah (2013) Qatar's educational reform: The experiences and perceptions of principals, teachers and parents, in *International Journal Education*, Vol. 5, No. 3, pp. 108-135; (2) Sonja Ben Jaafar (2012) Leadership in Qatar's educational reform in Louise Volante (Ed.) *School Leadership in the Context of Standards-Based Reform: International Perspectives*. London: Springer (pp. 229-246); (3) John McKeown (2011). 'Give us a place to stand and a place to grow': Educational reform in Ontario and Qatar (pp. 165-176). In *Proceedings of the X Worldwide Forum on Education and Culture, Rome, Italy*. Roberto Bergami, Sandra Liliana Pucci, and Annamarie Schuller (Eds.).

[14] In the QES Administrator Questionnaire the respondents were asked to classify their current position as: (1) school principal; (2) academic advisor; (3) subject coordinator; or (4) other (specify). For this report, we use the following categories: (1) school principal/VP/license owner; (2) academic advisor; and (3) subject coordinator. We excluded other administrators from this report as their responsibilities are not as directly linked to curriculum standards and curriculum content.

[15] In a review that finds criticism with the new Qatari licensure system for teachers and administrators, Ellili-Cherif, Romanowski, and Nasser cite research emphasizing that educational reform requires that educators not only change their educational practices, but their belief systems as well. (Maha Ellili-Cherif, Michael H. Romanowski, and Ramzi Nasser (2012). All that glitters is not gold: Challenges of teacher and school leader licensure licensing system in Qatar. *International Journal of Educational Development* 32: 471-481.

[16] According to the SEC website, curriculum standards have been developed and are being administered by the Curriculum Standards Office in science, mathematics, English, Arabic, and Islamic studies, as well as in early years education (3-6 year olds) (http://www.sec.gov.qa/En/SECInstitutes/EducationInstitute/Offices/Pages/CurriculumStandardsOffice.aspx)

[17] See the NDS, p. 123.

[18] See the 2004 Education Institute report, p. 9. The curriculum standards for English includes a description of the purposes of the standards and can be found at www.ibe.unesco.org/**curricula**/**qatar**/qa_al_eng_2004_eng.pdf

[19] NDS, p. 132.

[20] The gamma for the relationship is .66.

[21] In a 2005 paper Howard and Major describe four primary advantages of teacher-produced materials: (1) Contextualization – allows teachers to take into account their own unique learning environment rather than using a generic material developed for all classrooms; (2) Individual needs – teachers can produce or select materials that meet the particular level and abilities of their students, rather than materials developed for all levels; (3) Personalization – provides a personal touch to the materials and also allows the teachers to be more spontaneous; and (4) Timelines – teachers can respond to current local, national, and international events and incorporate them into their lessons. Howard, J. and Major, J. (2005) Guidelines for designing effective English language teaching materials. Seoul, South Korea: PAAL9, Oct 2004. In Proceedings of the 9th Conference of Pan-Pacific Association of Applied Linguistics 101-109. http://www.paaljapan.org/resources/proceedings/PAAL9/pdf/Howard.pdf. (Conference Contributions - Papers in published proceedings).

[22] See for example: Emery J. Hyslop-Margison and Alan M. Sears (2010). Enhancing teacher performance: The role of professional autonomy. Interchange 41: 1-15.

[23] Zellman et al. (2009) in an early evaluation of education reform in Qatar found that many concerns were expressed by parents about the lack of a single textbook and about the use of duplicated worksheets and other materials developed by teachers with no experience in developing such materials. As a result, "to offset some of the concerns about the lack of prescribed textbooks, the Education Institute implemented a policy for academic year 2007-2008 wherein schools had to select one primary textbook that would address approximately 70 percent of the material included in the relevant standards. Supporting material could augment the selected text." (p. 68) (Gail L. Zellman, Gery W. Ryan, Rita Karam, Louay Constant, Hanine Salem, Gabriella Gonzalez, Nate Orr, Charles A. Goldman, Hessa Al-Thank, and Kholode Al-Obaidli (2009). *Implementation of the K-12 Education Reform in Qatar's Schools*. Santa Monica, CA: RAND Corporation.

[25] Ellili-Cherif and Romanowski (2013) comment on the change in textbooks within the general revisions to education reform in Qatar and note that, "With the launch of the reform, schools were free to select instructional materials, and teachers had much maneuvering space in choosing materials that they believe help their learners to reach the curriculum standards. However, now, many schools are required to select one textbook from a list provided by the Supreme Education Council." (p. 15). Maha Ellili-Cherif and Michael Romanowski (2013). Education for a New Era: Stakeholders' perception of Qatari education reform. International Journal of Education Policy & Leadership 8(6): 1-17.

[26] An article in the *Doha News* in April 2012 revealed that the SEC had arranged for international publishers to prepare teaching materials in Arabic, Islamic history Qatari history, math, science, social studies and English. http://dohanews.co/sec-new-learning-materials-will-comply-with-qatars/ Additionally, examples of lesson plans and activities linked to curriculum standards can be found at such SEC-sanctioned sites as as the one for science standards and activities (http://csoscience.wordpress.com/2012/11/)

[27] http://www.sec.gov.qa/En/Elearning/Pages/default.aspx

[28] http://www.sec.gov.qa/En/SECInstitutes/EvaluationInstitute/SAO/Pages/default.aspx

[29] On two of the national test questions the response categories were different in the Administrator Questionnaire and the Teacher Questionnaire. Both teachers and administrators were asked whether they strongly agreed, somewhat agreed, somewhat disagreed, or strongly disagreed with five statements: (1) National tests are adequate for students' level; (2) National tests are useful for students with regard to academic achievement; (3) National tests are a burden on the teachers; (4) National tests are a burden on the students; and (5) National tests are used effectively to enhance the learning process. For the remaining two statements – the students' grades in the national tests reflect their real effort and students grades in the national tests reflect the fulfillment of the national standards – administrators were offered the same set of response options as for the other five statements, while teachers were asked to use a scale where 1=to a great extent, 2=to some extent, 3=to a little extent, and 4=to no extent at all.

[30] We created a summary measure of attitudes toward national tests after factor analysis revealed that five items ((1) National tests are adequate for students' level; (2) National tests are useful for students with regard to academic achievement; (3) National tests are a burden on the teachers; (4) National tests are a burden on the students; and (5) National tests are used effectively to enhance the learning process) all load on a single factor with factor loadings of at least .65. However, no mean differences in the scale appeared based either on the subject or the grade level taught.

[31] Schools and Schooling in Qatar 2011-2012: Annual Report on Schools and Schooling in Qatar. Evaluation Institute, Doha, Qatar. http://www.sec.gov.qa/Statistical%20Report/2011-2012.pdf

[32] Qatar's Third National Human Development Report, p. 63. http://planipolis.iiep.unesco.org/upload/Qatar/Qatar_HDR_2012_English.pdf